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STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION	SUPERIOR COURT OF NEW JERSEY CHANCERY DIVISION - BERGEN COUNTY
	DOCKET NO. C-2996-75
Plaintiff,	
-v-	Civil Action
VENTRON CORPORATION, et. al.,	STATEMENT OF UNDISPUTED BASIC FACTS AS SUBMITTED BY DEFENDANTS ROBERT M. AND RITA W. WOLF
Defendants.	

Pursuant to the Order and direction of the Court, defendants Robert and Rita Wolf hereby submit this "Statement of Undisputed Basic Facts" for purposes of the first hearing in the above-captioned matter to determine what, if any, corrective actions are presently required and which parties are liable for the costs and other obligations arising therefrom.

Most statements contain one or more references to the documents, depositions, interrogatories, and pleadings which sup-

port the Statement. Efforts have been made herein to exclude conclusory statements and statements of fact which are in dispute. All objections to relevancy and materiality shall be deemed preserved by all parties whether or not the fact is admitted.

1. The Subject Property is Located in Wood Ridge and Carlstadt, Bergen County, New Jersey.

(a) The property (hereinafter, "the property") which is the subject matter of the within litigation consists of approximately forty (40) acres of real estate.

(b) The property may be identified on the current Bergen County tax maps as Block 229, Lots 10A and 10B, Wood Ridge (hereinafter, the "Ventron property"); and Block 229, Lot 8, Wood Ridge and Block 146, Lot 3, Carlstadt (hereinafter, the "Velsicol property").

(c) The Ventron property (Block 229, Lots 10A and 10B, Wood Ridge) consists of approximately 7.1 acres.

(d) The Velsicol property (Block 229, Lot 8, Wood Ridge and Block 146, Lot 3 Carlstadt) consists of approximately 33 acres.

(e) The property is located adjacent to Berry's Creek, a tributary of the Hackensack River, on its westerly side approximately two (2) miles upstream of the Berry's Creek Tidal Marsh.

(f) The property is located without the area designated as the Hackensack Meadowlands District.

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2. There Have Been Several Owners of the Property Since 1929.

(a) From approximately 1929 through 1960, F.W. Berk and Co., Inc., (hereinafter "Berk"), a Maryland corporation, owned and operated a chemical processing facility at the property.

(b) At one time Berk manufactured methyl mercury salt but discontinued the product after a worker was overcome by fumes and killed (Kirk Tr. at pgs. 74-75).

(c) By 1960 Berk had come to be owned by William Taylor (Kirk Tr. at pgs. 15-25).

(d) In 1960 Taylor sold the assets of Berk to defendant Velsicol Chemical Company (hereinafter "Velsicol"), an Illinois corporation which formed Wood Ridge Chemical Corporation, a Nevada corporation, (hereinafter "WRCC") as a wholly-owned subsidiary to own and operate the chemical plant (Kirk Tr. at pgs. 15-18; 25; Ex. Kirk-1).

(e) From June 1960 to February 1, 1968, WRCC operated the business as a wholly-owned subsidiary of Velsicol (Velsicol Answer to State Interrogatory No. 3; Bernstein Tr. 9/14/76, at pgs. 43-44).

(e) WRCC operated a mercury processing facility on the portion of the property called herein the Ventron property (7.1 acres) from 1960 until 1968 (Velsicol Answer to State Interrogatory No. 23)

(f) In June 1967 WRCC subdivided the property into what is referred to as the Ventron and Velsicol properties and transferred title to the adjacent Velsicol property to its

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parent, Velsicol (Kirk Tr. at p. 82). WRCC continued to hold title to the property referred to herein as the Ventron property.

(g) By stock purchase agreement dated February 1, 1968 (DW-38), defendant Ventron Corporation, a Massachusetts corporation, (hereinafter "Ventron") acquired the stock of WRCC from Velsicol (Ventron Answer to State Interrogatory No. 1(a)).

(h) Under Ventron's ownership, from 1968 to 1974, WRCC processed and manufactured mercury and mercuric-based products on the Ventron property (Ventron Answers to State Interrogatories No. 2 and 12).

(i) Record title to the Ventron property remained in WRCC until 1974 (Ventron Answer to State Interrogatory No. 1(d)).

(j) On May 21, 1974, Ventron conveyed title to the Ventron property to defendants Wolf by deed dated May 7, 1974 (DV-1).*

(k) In 1975 the Ventron property (Block 229, Lot 10) was subdivided into Lots 10A and 10B.

(l) In 1975 defendant U.S. Life Insurance Company (hereinafter, "U.S. Life") acquired title to Lot 10A of the Ventron property from Wolf pursuant to a sale and leaseback agreement DV-659).

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* Robert M. Wolf is a real estate developer. Rita W. Wolf, the wife of Robert M. Wolf, is a joint owner of the subject property. Hereinafter, "Wolf" will refer to Rita W. and Robert Wolf.

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3. Ventron Acquires WRCC in 1968.

(a) In the summer of 1967 Ventron commenced negotiations with Velsicol for its acquisition of the stock of WRCC (Kirk Tr. at pgs. 70-71).

(b) Ventron conducted an extensive investigation of WRCC's plant operations, including potential pollution problems, prior to its acquisition (Kirk Tr. at p. 64).

(c) The potential pollution problems were discussed freely between Ventron and Velsicol pursuant to a secrecy agreement (Kirk Tr. at pgs. 62-65).

(d) Regarding the proposed sale of WRCC, Milton C. Lauenstein, Jr., president of Ventron, and John F. Kirk, executive vice-president of Velsicol, discussed specifically the "potential expenses involved in pollution control and safety programs" at WRCC which discussion was specifically referred to in the formal acquisition documents (Letter dated January 3, 1968).

(e) By the stock purchase agreement dated February 1, 1968, Ventron acquired the stock of WRCC from Velsicol on the specific disclaimer (Schedule A) of any warranty that "the Wood Ridge plant would not at some time entail alterations or other steps to comply with applicable federal, state and local environmental laws and regulations." (DW-38)

(f) At the time of the Ventron acquisition, Velsicol had been manufacturing purified mercury, inorganic and organic mercury compounds, and several sulfur, non-mercuric based fungi-

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cides (Bernstein Tr. 9/14/76 at pgs. 33-34).

4. Ventron* Manufactured and Supplied Mercury and Various Mercury-Based Products from its Wood Ridge Plant from 1968 through 1974.

(a) Ventron admits it was one of the largest domestic processors/users of mercury from 1968 to 1974 (DW-6).

(b) Ventron admits having consumed approximately 2,000 pounds of mercury for each operating day (1 shift/six days a week) (WRCC Application to U.S. Army Corps of Engineers for Permit to Discharge dated June 30, 1971; DW-6).

(c) From 1968 to 1974 Ventron manufactured fungicides, insecticides, organic and inorganic mercuric salts, borons, re-distilled mercury, red mercuric oxide, yellow mercuric oxide, phenyl-mercuric acetate, and other organic and inorganic mercuric compounds. Ventron also engaged in the storage of prime virgin mercury (Faye Tr. I at pgs. 13-15; 18-20; Bernstein Tr. 9/14/76 at p. 34; Ventron Answer to State Interrogatory 12).

(d) There were sixteen buildings located on the Ventron property until 1974 (Ventron Answer to State Interrogatory No. 3).

(e) Exhibit P-38 indicates the location of each of these buildings.

(f) Buildings 13A, 18, and 20 were those plant areas in

* When Ventron conveyed title to the Ventron property to Wolf in May 1974, it dissolved its subsidiary, WRCC. Ventron assumed all assets and liabilities of WRCC. By operation of law, WRCC ceased to exist as a separate corporate entity. Therefore, hereinafter, "Ventron" will refer to the parent and its subsidiary.

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which the mercury processes occurred and from which the mercury-bearing effluent was generated (DW-6).

(g) Building 13A housed the manufacture of phenylmercuric acetate and various phenyl mercury compounds (Hoffman Tr. at pgs. 77-78; Faye Tr. I at p. 20).

(h) Building 18 was the location for the manufacture of red mercuric oxide, yellow mercuric oxide, triple distilled mercury, mercuric chloride, and other mercury specialty compounds (Hoffman Tr. at pgs. 78-79; Faye Tr. I at p. 19).

(i) Building 18 "was one of the large mercury production buildings. It was also the location of the effluent treatment system" (Bernstein Tr. 9/30/77 at p. 270).

(j) Building 18 contained a storage vault for flasks of prime virgin mercury (Hoffman Tr. at pgs. 78-79).

(k) Building 20 was the location for the recovery of elemental mercury by distillation of mercury-bearing solids and sludges (DW-6; Bernstein Tr. 9/30/77 at pgs. 247-250; Faye Tr. II at p. 152).

(l) The mercury-bearing solids and sludges, which were distilled in Building 20, were internally generated by Ventron's manufacturing processes and also supplied directly for reclamation by Ventron customers (Cadmus Tr. at pgs. 56-59).

(m) After the operation of the stills, residue remained and was placed in drums and stored (Faye Tr. I at pgs. 15-17; Cadmus Tr. at pgs. 56-59; Hoffman Tr. at pgs. 21-22).

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(n) Building 17 was a shed used for mercury distillation (Ventron Answer to State Interrogatory 5; Faye Tr. I at p. 17).

(o) Building 19 was a warehouse which stored finished products and certain raw materials (Hoffman Tr. at pgs. 78-79).

5. Waste Treatment at Ventron as of February 1968

(a) As of February 1968, waste treatment processes at Ventron consisted of a plant sewer and drainage system and a collecting sump.

(b) The plant sewer and drainage system conducted process wastes from buildings 3, 9, 13 A & B, 16, 18 and 20 to a common collecting point located at the southeast corner of the Ventron property (Fig. 1, Metcalf & Eddy Study, dated December 6, 1968).

(c) Prior to 1968 the mode of effluent treatment employed at Ventron included neutralization of the waste water, sedimentation of solids, and filtration (Faye Tr. I at p. 71; DW-27; DW-19).

(d) By agreement dated February 1, 1968, Velsicol granted and conveyed to Ventron an easement over the Velsicol property to permit installation and maintenance of a pipeline to conduct plant effluent and surface water from the Ventron property across the Velsicol property to a discharge outfall on Berry's Creek (Easement Agreement dated February 1, 1968).

(e) Total plant waste waters were directed from the southeast corner of the Ventron property through a drainage pipe

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which traversed the Velsicol property and terminated at Berry's Creek.

(f) The Ventron waste waters were discharged directly into Berry's Creek.

6. 1968: Ventron/WRCC Undertakes Waste Water Study

(a) On February 1, 1968 the State of New Jersey, Department of Health* notified Ventron that its waste waters were unsatisfactory (DV-131).

(b) A meeting between the State and Ventron representatives was scheduled for February 9, 1968 to discuss the pollution emanating from the Ventron property to Berry's Creek (WRCC memorandum dated February 14, 1968; letter from State to WRCC dated February 13, 1968).

(c) At a meeting on February 14, 1968 the State directed Ventron to undertake immediately industrial waste water treatment studies, to formulate plans for waste water treatment facilities, and to investigate sources of additional effluent discharges at the Ventron property (WRCC memorandum dated February 14, 1968; letter from State to WRCC dated February 13, 1968).

(d) In February 1968 the State instructed Ventron to submit for approval the designs and specifications for any waste water treatment facilities prior to installation (Id).

* Prior to the 1971 formation of the New Jersey Department of Environmental Protection (hereinafter, the "DEP"), DOH was the cognizant state agency with primary authority for pollution control. Hereinafter, the "State" will refer to that state agency with environmental regulatory power.

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(e) As of February 1978 Ventron was required to submit to the State bi-monthly reports of its progress (Id).

(f) In March 1968 Ventron retained the services of a Boston engineering firm, Metcalf & Eddy, Inc., to conduct waste water analyses and to investigate the feasibility of biological treatment of the effluent. (Letter dated March 20, 1968 from Metcalf & Eddy, Inc. to WRCC; letter dated April 19, 1968 from WRCC to Metcalf & Eddy, Inc.)

(g) In April 1968 Ventron reported to the State its retention of Metcalf & Eddy and outlined its waste water study to date. (Letter dated April 18, 1968 from WRCC to State).

(h) By June 1968 Ventron had installed a V-notch weir at the southeast corner of the Ventron property to measure the flow rate of total plant effluent prior to its discharge from the Ventron property to Berry's Creek (DW-27; letter dated June 17, 1968 from WRCC to State).

(i) In 1968 Metcalf & Eddy reported mercury levels in Ventron's plant effluent up to 24,000 parts per billion (ppb) (DW-27).

(j) In December 1968, Metcalf & Eddy submitted to Ventron its waste water report in which it set forth the character and volume of the industrial wastes and recommended certain procedures for pretreatment and disposal (DW-27).

(k) In its December 1968 report, Metcalf & Eddy suggested that Ventron pretreat its waste water and attempt to gain

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gain acceptance for its effluent discharge into the Bergen County sewer system. (DW-27)

(l) There were two sewer systems nearby the Ventron site, one belonging to Wood Ridge, the other to Bergen County. Discussions regarding tying-in to one or the other were held even before 1968 and resurrected periodically thereafter but these discussions never came to fruition. (Bernstein Tr., 7/14/76, at pgs. 67-68) Ventron continued at all times from 1968 to 1974 to dump directly into Berry's Creek.

(m) On June 17, 1968, Ventron informed the State that it anticipated completion of construction of waste treatment facilities by November 1969 (DV-119).

(n) There is no evidence to indicate that Ventron ever initiated any of the remedial measures recommended by Metcalf & Eddy for treatment of its industrial waste waters.

(o) By letter dated January 24, 1969, Ventron submitted the Metcalf & Eddy study to the State (DV-111).

(p) The State reviewed the study and objected to the toxicity of the effluent due to the presence of mercury compounds (DV-110, dated February 14, 1969).

(q) In 1969 the State continued to monitor Ventron and in April 1969 notified the company that its final effluent was unsatisfactory (DV-107).

(r) Bernstein (Ventron), Manager of Mercury Chemicals, who spent 60% of his time physically at Wood Ridge, claims to have

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been unaware of any communications from federal and state agencies in this period (Bernstein Tr. 9/1/76, at pgs. 48-49).

7. Ventron's Pre-Phase I Waste Treatment System

(a) As of August 1970, Ventron's processed wastes, storm water, cooling water, boiler water and other utility waters were collected into the plant's sewer system (Faye Tr. I at p. 24; Faye Tr. III at p. 101).

(b) In August 1970, Ventron's entire plant effluent, including storm water, was directed by various drains and pipes to a concrete in-ground cylinder in the southeast corner of the property where it entered a drainage ditch across the Velsicol property for discharge into Berry's Creek (Faye Tr. I at pgs. 24-26).

(c) As of August 1970, a large collecting basin, a below-grade concrete cylinder, was located at the southeast corner of the Ventron property (Faye Tr. I at p. 25).

(d) The concrete cylinder had a capacity of approximately 1000 to 1550 gallons (Faye Tr. I at p. 25).

(e) As of August 1970, there were two pipes which conducted waste materials into the concrete cylinder (Faye Tr. I at p. 26).

(f) As of August 1970, waste materials exited the cylinder, which was below-ground with a removable wooden plank cover, through an overflow outlet located a few inches below the top rim of the cylinder (Faye Tr. I at p. 26).

(g) As of August 1970, the cylinder would overflow in a southerly direction and within 10 feet combined with another large

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pipe which directed the flow in an easterly direction (Faye Tr. I at pgs. 26-27).

(h) As of August 1970, the overflow from the plant combined with a ditch that ran along the southside of the plant the entire east-west length of the plant (Faye Tr. I at pgs. 26-27).

(i) As of August 1970, Ventron had two sedimentation systems: the red oxide system and the phenol mercury system (Faye Tr. I at p. 30).

(j) The red oxide system which consisted of vats and basins used for settling solvents was located inside building 18 (Faye Tr. I at p. 30).

(k) Some of the basins and vats were below ground level, while others were above-ground level (Faye Tr. I at p. 31).

(l) The in-ground basins were concrete; the above-ground basins were metal or wood (Faye Tr. I at p. 31).

(m) As of August 1970, the phenol mercury system consisted of a wooden vat and a concrete collecting basin, which was externally located adjacent to buildings 13A and B on the south side (Faye Tr. I at p. 31).

(n) An overflow pipe connected directly to the basin below-grade to conduct liquid wastes to the plant sewer system (Faye Tr. I at pgs. 33-34).

(o) As of August 1970, the exterior basin adjacent to buildings 13A and 13B received wastes from those buildings and settled out the solids from the liquids. The liquids overflowed through the pipe to the sewer system (Faye Tr. I at p.36).

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to sample effluent (Faye Tr. I at p. 44).

(x) As of August 1970, Ventron had neutralization tanks to neutralize certain spent liquors (Faye Tr. I at p. 45).

(y) As of August 1970, Ventron treatment of its mercury-bearing wastes consisted of neutralization and treatment with caustic soda, settling, and treatment with sodium chloride for the organic wastes (Faye Tr. I at p. 71).

8. 1970 U.S. Consciousness of Mercury Raised:

(a) "In early 1970, the national consciousness had been raised with respect to mercury . . ." (Ventron Answer to State Interrogatory No. 20)

(b) In 1970 Ventron became aware that a farmer in New Mexico had fed his hogs mecury contaminated seed grain. The slaughtered hogs were eaten by children who developed a severe case of mercury poisoning. (Bernstein Tr., 2/9/77, at pp. 294-96).

(c) Later in 1970, after receipt of alarming reports of mercury in Canadian waters, the Department of the Interior directed the Federal Water Quality Administration* to assess the problem in the United States. (Stopford Report, 12/27/77, at p. 1; Bernstein Tr., 2/9/77 at pp. 294-96).

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* Prior to the fall 1970 formation of the United States Environmental Protection Agency (hereinafter, "EPA"), the Federal Water Quality Administration was the cognizant federal agency with primary responsibility for pollution control. Hereinafter, "EPA" refers to that federal agency with environmental regulatory authority.

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(d) In mid-1970 the EPA inaugurated an extensive pollution investigation of significant mercury users in the northeast region of the United States (Stopford Report, 12/27/77, at p. 2; DE-4B).

(e) In mid-1970 the EPA scheduled preliminary sampling for certain mercury-using companies (DE-4B).

(f) In 1970 the EPA commenced "[i]ntensive sampling for legal documentation" of Ventron (DE-4B).

(g) On August 12, 1970, the EPA sampled the Ventron outfall to Berry's Creek upsteam and downsteam, including water and sediment samples (DE-4Z).

(h) Insofar as the record shows, August 12, 1970 was the first time the sediment in Berry's Creek was sampled and analyzed for mercury.

(i) Laboratory analyses of the August 1970 water samples indicated mercury concentrations in Berry's Creek 100 yards upstream of the Ventron outfall was 10 parts per billion (ppb) and 100 yards downstream was 21 ppb (DE4-2; DE4C).

(j) The mercury concentration in the Ventron effluent in August 1970 was 5,000 ppb (DE4-2; DE4C).

(k) The effluent sample in August 1970 was based on an eight-hour composite with an estimated plant flow rate of 35 gallons per minute (gpm) (DE4C).

(l) Based on 35 gpm flow rate and 5,000 ppb mercury in an eight-hour composite effluent sample, in August 1970 the EPA

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calculated Ventron was discharging at least 2.1 pounds of mercury daily into Berry's Creek (DE-4C).

(m) The mercury assays of the sediment samples in August 1970 revealed mercury concentrations of 8,475 ppm upstream and 7,740 ppm downstream (DE-4Z; DE4C).

(n) The EPA sediment data obtained near the Ventron outfall "was nearly 2.5 times as great as the highest concentration previously reported in the available world literature (3,504 ppm in a small swamp in Ashland, Massachusetts)" and remains today the highest known concentration of mercury in fresh water sediment in the world (M-4; M-14).

(o) Additional analysis was performed by the EPA on Ventron's effluent to determine the dissolved mercury content. The data reflected a dissolved mercury level of 1500 ppb (DE-4O).

(p) On August 27, 1970 the EPA laboratory forwarded the Ventron data to EPA's Regional Office and to Washington, D.C. (DE4C)

(q) The EPA decided to direct Ventron to appear at an informal hearing in Washington, D.C. (DE-4C).

(r) In October 1970, the EPA performed an additional series of analyses on the samples it had collected on October 8, 1970. The samples included total Ventron plant effluent, filtered and unfiltered effluent (DE4H; DE-1QQ).

(t) On October 10, 1970, the EPA visited the Ventron plant to conduct a 24-hour composite sample and a continuous flow measurement of the overall plant effluent (DE4-Z).

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(u) The EPA assessed the collected data. It showed a mercury level of 7,000 ppb and a flow rate of 54.8 gpm (DE4-Z).

(v) In October 1970, the EPA calculated Ventron was discharging 4.6 pounds of mercury each day into Berry's Creek (DE4-Z).

(w) By letter dated October 22, 1970, the EPA notified Ventron that a meeting with the Acting Commissioner of Enforcement and Standards Compliance in Washington had been arranged for November 6, 1970 to discuss corrective action to eliminate the mercury problem (DE4-V).

9. Ventron Commences Design and Implementation of Phase I.

(a) Ventron personnel prepared a capital expenditure report dated October 23, 1970 which outlined Phase I of a projected three-stage program for its effluent treatment system (DW-26; Faye Tr. I at pgs. 56-58).

(b) Ventron admitted that the need to control the mercury effluent was then "at an emergency level" (DW-26).

(c) Ventron admitted that "[w]hile the main incentive for Phase I investment [was] the necessity for pollution control, there [was] also a fairly attractive economic return on investment to be realized" (DW-26).

(d) Phase I was based on reduction and precipitation of soluable mercury with sodium borohydride, followed by collection of the precipitated mercury through centrifugation and filtration.

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(e) Phase I called for the segregation of all mercuric effluent streams from non-mercuric effluent streams, collection of mercury-bearing effluent, and isolation from existing outfall drains.

(f) Under Phase I, the clarified mercuric effluent would recombine with the non-mercuric effluent in existing outfall drains for discharge to Berry's Creek.

(g) On November 6, 1970, Ventron representatives met with EPA in Washington. The EPA advised Ventron it was dumping 4.2 pounds per day of mercury in Berry's Creek. Ventron presented its Phase I program (Faye Tr. I at pp. 58-59). EPA advised Ventron to reduce its mercury discharge in total plant effluent to 0.5 pounds per day (lb/day) by January 31, 1971 at which time EPA would resample Ventron effluent, evaluate the mercury reduction, and determine the necessity for additional abatement measures (DE4-Z).

(h) On November 6, 1970, Ventron informed the EPA that it had not realized the extent of the mercury pollution because of the unsophisticated analytical techniques it employed (DE4-Z; Ventron Answer to State Interrogatory No. 20).

(i) During the November 6, 1970 meeting, the EPA declared the necessity of defining the extent of contaminated sediment in Berry's Creek (DE4-Z).

(j) In November 1970 the EPA and Ventron engaged in a discussion concerning the responsibility for and removal of the mercury-bearing sediment in Berry's Creek (DE4-Z).

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(k) The EPA advised Ventron it would defer decision on the removal of the contaminated sediment until it had the opportunity to evaluate Ventron's pollution control efforts (DE4-Z).

10. Phase I Goes into Operation

(a) On November 13, 1970 EPA laboratory technicians met with Ventron personnel to review analytical procedures and instruments to minimize the differences in test methods and results (Ventron internal memoranda dated November 9, 1970 and November 16, 1970).

(b) In late 1970 Ventron installed monitoring and measuring devices at the southeast corner of the Ventron property. The devices measured (1) the flow of all waste streams and drainage at that location where all pipes co-terminated and (2) the level of mercury in total plant effluent after treatment. Incident to Phase I, Ventron isolated the settling pit adjacent to building 13A by breaking its connection to the underground pipe and repiping to building 18. The original pipe was sealed and left in ground. (Faye Tr. I at pp. 67-68).

(c) Ventron's deadline for completion of Phase I was January 31, 1971.

11. Ventron Discovers The Residual Problem

(a) Phase I was operational by February 1971 (Faye Tr. I at p. 81).

(b) As part of Phase I, Ventron instituted an increased sampling program (Faye Tr. I at p. 64).

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(c) The Phase I sampling program called for increased frequency of sampling at the southeast corner and additional sampling points at locations along the sewer line and from process streams (Faye Tr. I at p. 65). Ventron also sampled its effluent immediately after treatment.

(d) The EPA's standard for mercury content of discharged effluent as of February 1971 was known to Ventron to be less than 0.5 lbs./day and would be reduced to less than 0.1 lb./day as of July 1, 1971 (DW-4).

(e) On February 9 and 10, 1971 Ventron collected samples of its treated and total effluent which it submitted to EPA for analysis (DW-5).

(f) Total effluent was the combination of treated effluent plus all streams (including storm water, boiler blowdown, and "non-mercuric" process wastes) which did not pass through the Phase I treatment system.

(g) In April 1971 EPA's analysis of the samples revealed that the mercury content in the total plant effluent was a factor of four larger than that in the treated plant effluent (DW-5).

(h) On February 16 and 17, 1971 Ventron's Barry Faye collected and submitted for analysis to EPA samples of treated plant effluent and total plant effluent (DE-1NN).

(i) EPA's analysis of the February samples showed mercury levels of 220 ppb in the treated effluent and 970 ppb in the

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total plant effluent (DE 1-OO dated February 1971). Ventron was not even discharging the mercury-bearing effluent from its manufacturing operations during the February sampling and so advised EPA (DE4-DD). EPA's analysis showed that Ventron was discharging approximately 0.1 lb./day mercury even without production occurring.

(j) On February 17, 1971 Ventron's plant engineer reported to Ventron's vice president Joseph Bernstein the fact there was a 50% increase or more in mercury concentration in the effluent from the concrete treatment tank adjacent to Building 18 to the final measuring point at the weir (Memorandum from F.H. Wilson to Joseph Bernstein dated February 17, 1971).

(k) At first Ventron's plant engineer attributed the increase to the incomplete flushout of the lines. (Id.)

(l) In February 1971 within Ventron personnel discussed the increase in mercury from treated to toal efluent with EPA's John Ciancia and imputed it to mercury in the waste lines (DW-2).

(m) EPA advised Ventron that the residual in the lines ought to flush in three to four weeks (DW-2).

(n) The DEP, which had continued to sample Ventron's effluent, reported mercury results of 950 ppb in the final effluent from a March 2, 1971 sampling (DV-97).

12. Ventron Commences Phase II

(a) Phase I had reduced processed effluent but had revealed a new and unknown source of mercury 2 to 4 times larger than the process waste. This became known as the residual problem.

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12. Ventron Commences Phase II

(a) Phase I had reduced processed effluent but had revealed a new and unknown source of mercury 2 to 4 times larger than the process waste. This became known as the residual problem.

(b) Efforts to further reduce plant discharge of mercury after February 22, 1971 were discribed by Ventron as part of Phase II (Faye Tr. I at p. 89). Plans for Phase II commenced March 8, 1971 (Memorandum from F. Wilson to B. Faye dated March 8, 1971).

(c) Phase II was to be a secondary treatment system. It called for isolation of existing lines and drains, repiping, recovery tanks, treatment of settled sludge, and installation of a sump and a pump (Memorandum dated March 19, 1971 from E.M. Mykowski to JHB, JGH, FHW).

(d) As Phase II was initiated, the residual problem did not terminate; mercury in total plant effluent appeared in quantities as much as ten times greated than treated effluent. (O'Rourke Tr. at pgs. 84-85).

(e) EPA's John Ciancia discussed with Barry Faye, Ventron, once more the mercury-laden sludge in Berry's Creek in the vicinity of the discharge (DE4-AA).

(f) On May 6, 1971 in a memorandum to EPA's Regional

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Office, John Ciancia, EPA, recommended as priority a meeting with Ventron (DE1-0000).

(g) On May 6, 1971 Ventron contacted James O'Rourke, Ph.D., Metcalf & Eddy, Inc., for an advice account concerning its effluent problem. O'Rourke met with Bernstein and Wilson to discuss their water problems (O'Rourke Ex. 2, dated May 6, 1971; O'Rourke Tr. at pgs. 10; 15-16).

(h) On May 27, 1971 Ventron representatives and O'Rourke met with EPA to discuss the company's mercury abatement program and its progress toward compliance with the 0.1 lb./day mercury discharge limit (Bernstein Tr., 9/21/76, at p. 195).

(i) Ventron informed EPA that it planned to replace its treatment system with a final system by June 30, 1971 (DE4-DD).

(j) Ventron admitted that the residual mercury problem appeared significant (DE4-OO).

(k) In their discussions, Ventron and O'Rourke concluded that mercury in the groundwater and soil could be infiltrating the underground lines (O'Rourke Tr. at pgs. 45-47; 54-55).

(l) At the meeting of May 27, 1971 Ventron told EPA that it attributed the problem to either mercury that had accumulated in or infiltrated into the underground lines (DE4-DD).

(m) EPA informed Ventron that it must eliminate all new sources of mercury discharge.

(n) EPA advised Ventron that it must reduce its total

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mercury discharge, including the residual, to less than 0.1 lb./day (DE4-DD; O'Rourke Ex. 4).

(o) EPA directed Ventron to submit bi-monthly reports of daily sampling for treated mercury-bearing effluent and overall plant effluent until Ventron implemented a new abatement program and until the level of mercury discharge met EPA's standards (DE4-DD; O'Rourke Ex. 4).

(p) Ventron admitted that until February 1971 its "typical" mercury discharge was in the range of 2.0 to 4.0 lb/day (DW-6).

(q) By letter dated June 4, 1971, Ventron admitted that since February 1971 the mercury content of the total plant effluent averaged higher than the mercury-bearing treated effluent (DW-6).

(r) Ventron claimed that the increase was due to residuals in the lines and leaching into the lines (DW-6; Faye Tr. II at pgs. 144-145).

(s) O'Rourke testified that in his recollection the term "residual mercury" was used to signify that mercury in ground water or in the soil at the site. He discussed this topic with Faye and Bernstein (O'Rourke Tr. at p. 20).

(t) Ventron intended to replace the underground line which conveyed all plant effluent streams to the collecting basin prior to discharge through the drainage ditch to Berry's Creek to alleviate the residual problem. (DE4-DD).

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(aa) On June 8, 1971 the DEP sampled and analyzed Ventron's final plant effluent (DV-93).

(bb) On June 22, 1971 the DEP informed Ventron's plant manager, Barry Faye, that the laboratory results revealed a mercury content of 5,800 ppb (5.8 ppm) (DV-93; handwritten notes dated June 22, 1971).

(cc) Faye admitted that mercury levels were high in early June 1971 but asserted that Ventron's current corrective measures would reduce the discharge to 0.1 lb/day (handwritten note dated June 22, 1971).

(dd) Sometime prior to July 8, 1971, O'Rourke visited the plant site in the company of Ventron's Faye and Hoffmann (O'Rourke Tr. at pgs. 35-36).

13. Ventron Completes Installation of Phase II

(a) On July 9, 1971 Ventron met with EPA officials in New York.

(b) Ventron informed EPA that it expected completion of the final steps of installation of its secondary treatment system (Phase II) during the week of July 19, 1971.

(c) Ventron stated that it could not accurately assess its system's efficiency until August 1971.

(d) Ventron claimed its system would meet at least the federal standard of 0.1 lb/day.

(e) EPA expressed concern about the high and inconsistent values of mercury indicated in Ventron's sampling reports (DE1-WWWW).

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(f) Ventron suggested that the reported results were due to an error in the sampling method (DE1-WWWW).

(g) EPA doubted that this could be the cause of such gross error (DE1-WWWW).

(h) EPA raised again with Ventron the problem of residual mercury (DE1-WWWW).

(i) Ventron admitted it did not know the actual extent of the residual problem.

(j) Ventron stated it would not evaluate the residual problem until Phase II was operational.

(k) Ventron replied that it was replacing old pipe in the collection network.

(l) Ventron requested additional time until its secondary treatment system was operational.

(m) EPA agreed to defer temporarily any decision on the residual problem.

(n) EPA reiterated that its standard of 0.1 lb/day of mercury in the plant's discharge was a short term goal (DE1-WWWW).

(o) EPA informed Ventron it ultimately expected total elimination of all mercury discharges (DE1-WWWW).

(p) EPA directed Ventron to increase its effluent discharge reports from weekly averages to daily reports (Faye Tr. II at pgs. 174-175).

(q) EPA directed Ventron to submit an explanatory statement of its mercury treatment problems, specifically, the

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residual problem (DE1-WWWW; Memorandum of Record dated July 20, 1971).

(r) By letter dated July 22, 1971 (DE1-YYYY), Ventron set forth the "unique" problems effecting its effluent and its control and treatment.

(s) Ventron admitted an enormously high volume of mercury used in its operations (DE1-YYYY).

(t) Ventron admitted that from January 1971 to June 1971, it produced 495,366 pounds of mercurial products which contained 347,629 pounds of mercury (DE1-YYYY).

(u) Ventron blamed the age of the facility, the residuals in the drains, and the age of the sewer system for the high level of its residual mercury discharge and the difficulties of controlling the residual (DE1-YYYY). It did not allude directly to mercury in the soil.

14. <u>September 1971: EPA Inspects Site</u>.

(a) By letter dated August 17, 1971, Ventron transmtted to EPA the bi-monthly report of its daily plant effluent log for the weeks of July 19 and July 26, 1971 (DW-7).

(b) Ventron's Barry Faye admitted discrepancies between treated and total plant effluent discharges (DW-7; Faye Tr. II at pgs. 195-196).

(c) In August 1971 Faye hypothesized that inadequate sampling methods could account for low treated effluent discharges versus high total effluent discharges (DW-7).

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(d) EPA requested additional information from Ventron on the specific sampling methods used (DE1-CCCCC).

(e) EPA requested clarification of the reported discrepancies between the mercury content of the treated effluent and total plant effluent (DE1-CCCCC).

(f) By letter dated August 31, 1971 to EPA, Ventron acknowledged the discrepancies and the residual problem (DE1-FFFFF).

(g) Ventron stated it required additional time before it could focus attention on a solution to the residual problem (DE1-FFFFF).

(h) Ventron's "immediate goal [was] to reduce new discharges (those out of the new secondary treatment system) to within the current criteria." (DE1-FFFFF).

(i) Ventron asserted that "the resolution of the reported discrepancies and potential residual contamination, must of necessity wait for the attainment of precise control and accurate measurement of new discharges." (DE1-FFFFF)

(j) In September 1971 EPA's William Horner expressed concern that "Ventron Corporation [was] either not being completely candid with [EPA] or that the Corporation [was] not doing its level best to eliminate problems it [was] having in sampling the nature and extent of its mercury discharge." (DE1-XXXXXX, dated September 9, 1971)

(k) EPA decided to schedule an on-site inspection of the Ventron plant (Id.).

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(l) On September 16, 1971, EPA's inspected the Ventron site (DE1-DDDDDDD).

(m) During the inspection, Ventron personnel provided EPA with internally prepared schematic charts of the plant, the effluent sewer system and the secondary mercury removal system (Phase II) (DE4-DD).

(n) EPA personnel noted "immediately extremely poor housekeeping throughout the plant" (DE1-DDDDDDD).

(o) EPA personnel observed that "the unkempt and disorderly analytical lab [was] not conducive to believable analytical data." (DE1-DDDDDD)

(p) EPA's Horner discussed with Ventron his concern that the amount of mercury in the total plant effluent exceeded that in the treated effluent (DW-8).

(q) Horner advised Ventron of his strong feeling "that it [was] residual mercury in the ground that [was] entering the total effluent discharge." Ventron has admitted Horner "was adamant on this point" (DW-8).

(r) EPA (Horner) requested Ventron to maintain and submit a record of rainfall to determine the existence, if any, of a correlation between heavy precipitation and high values of mercury in its plant effluent discharge (DW-8).

(s) EPA recommended that Ventron again coordinate its analytical efforts with EPA-Edison Technical Branch on identical effluent samples to determine any inconsistencies in methods and techniques (DW-8).

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(t) EPA recommended that EPA-Edison conduct additional sampling at various locations along the plant discharge line (DW-8).

(u) EPA directed Ventron to perform mercury assays on soil samples (DW-8).

(v) After EPA's (Horner, Tidwell) inspection tour, Ventron's Barry Faye and Frank Wilson concurred that "it [was] difficult to see how sampling can be the culprit . . . " (DW-8)

14. Ventron Consults Metcalf & Eddy

(a) Shortly after the EPA inspection of September 16, 1971, Ventron (Wilson) contacted Dr. O'Rourke, Metcalf & Eddy, Inc. (DW-8)

(b) O'Rourke and Wilson discussed the difference between total mercury and mercury in process waste water. They agreed the age of the facility made it a distinct possibility the extra mercury was as a result of mercury in the soil and in the ground water (O'Rourke Tr. at pp. 45-46). O'Rourke stated to Ventron that "in his estimation, the best ecological solution was to leave the plant soil as is. It [was] his opinion that in all probability, the majority of that which is going to leach out to any reasonable degree has already leached out." (DW-8; O'Rourke Tr. at pp. 45-46.)

(c) O'Rourke based his opinion on the retention capacity of the soil and the oral descriptions given to him as to the uses of the plant site over a long period of time (O'Rourke Tr. at p. 47).

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(d) O'Rourke discussed with Ventron personnel that if material were to be removed from the site to eliminate mercury leaching from the soil, there would still be a disposal problem: "The problem really would not have been solved, merely relocated." The amount of soil involved would have been considerable (O'Rourke Tr. at p. 49). After the EPA visit of September 16, 1971, Wilson discussed removal of contaminated soil with O'Rourke. Wilson reported that O'Rourke raised with Ventron the question "that were the plant property to be excavated, where would the excavated material be disposed?" (DW-8); O'Rourke Tr. at pgs. 49-50).

(e) The chief chemist of Ventron, Magier, admits that there were significant quantities of mercury in the open pits on site. His laboratory at Ventron analyzed samples of the soil in analyses separate from that later performed by Metcalf & Eddy (Magier Tr. at pp. 11-12) Magier claimed Bernstein had direct knowledge of this sampling (Magier Tr. at p. 13).

(f) Ventron admits that at one time the laboratory received and analyzed samples of soil for determination of mercury content "to see if it were rich enough" to reclaim. (Cadmus Tr. at pgs. 67-68)

(g) Ventron admits "[t]here was mercury present but not at an economic level to be processed" (Cadmus Tr. at p. 68).

16. Fall 1971: EPA Increases Pressure on Ventron to Investigate Sources of Continued Mercury Discharges.

(a) By letter dated September 17, 1971, Ventron transmitted to EPA its bi-monthly report of daily effluent dis-

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charges for the weeks of August 16 and August 23, 1971 (DEl-GGGGG).

(b) Ventron's mercury content of total plant effluent reported on August 27 and 28, 1971 coincided with heavy rainfall (DEl-GGGGG).

(c) Faye stated that the reported flow was unusually high and represented abundant ground water runoff from rainfall.

(d) By letter dated September 27, 1971, EPA indicated dissatisfaction with the results of Ventron's analysis. (DW-9)

(e) EPA (Horner) stated that the data indicated "that some other factors [were] operating in addition to runoff water to contribute to the total discharge at [the Ventron] plant." (DW-9)

(f) Ventron's reported data for the period August 29, 1971 through August 29, 1971 revealed a consistent, upwardly biased pattern for total effluent mercury discharge as compared to treated effluent mercury discharge.

(g) Ventron's August 1971 daily effluent data showed that mercury in the total plant effluent was on the average 50% higher than that in the treated effluent.

(h) By letter dated September 27, 1971, EPA directed Ventron to improve housekeeping procedures, remove potential areas and conditions for mercury conamination, such as inadequate curbing, and institute and maintain a clean analytical laboratory (DW-9).

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(i) EPA advised Ventron that EPA personnel would be implementing a sampling program (DW-9).

(j) Ventron transmitted the EPA's September 27, 1971 advisory letter and Ventron's August 1971 effluent data to its consultant, O'Rourke and requested a meeting with him to discuss the situation (Wilson Ex.2, dated October 4, 1971).

17. October, 1971: Ventron Commences Limited Soil Sampling; EPA Reinspects Site and Samples.

(a) On October 12, 1971 Ventron notified EPA that it was commencing sampling and analysis of ground water and soil (DW-10).

(b) Ventron informed EPA that its plant would be shut down for the Thanksgiving holiday and for the Company's inventory for the period November 25 through November 29, 1971 (DW-10; Faye Tr. III at pgs. 41-42).

(c) During the four-day shutdown period, there would be no processing of any mercurials.

(d) Ventron intended to conduct a sampling of its "various effluent streams during this period and perhaps shed some light [on] where non-processed mercury [was] entering [the] effluent stream." (DW-10; Faye Tr. III at pgs. 41-42; 44-45)

(e) On October 22, 1971, EPA personnel returned to the Ventron site and obtained five samples of liquid and one sample each of soil and sediment (DE1-KKKKKKK).

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fluent leaving the plant than that in the mercury-bearing effluent immediately after treatment (DW-152).

(p) EPA advised Ventron that there was insufficient variation in Ventron's analytical methods and techniques to justify the anomalous results (DW-152).

(q) EPA requested Ventron to undertake a detailed study to determine the likely sources of the additional mercury (DW-152).

(r) EPA again explicity raised the possibility of mercury-saturated soil (DW-152).

(s) EPA directed Ventron to carry out a detailed analyis of all flows and "strategic soil samples" (DW-152).

(t) "We [EPA] request this answer to include mercury concentration in all significant 'non-mercurial' processes and various soil samples, within six weeks." (DW-152)

(u) EPA reminded Ventron that the Thanksgiving shutdown would provide an opportunity to determine the background of mercury levels in the drainage system (DW-152).

(v) By handwritten memorandum dated November 4, 1971, Ventron's Frank Wilson transmitted to O'Rourke a copy of a decision in a matter entitled Rhodia, Inc. v. Harris County, et al., 2 ERC 1906. Wilson noted that in addition to Ventron's potential interest in the manufacture of arsenicals, "This may be of interest re Wood Ridge..." In Rhodia, the Texas Court of Civil Appeals modified a temporary mandatory injunction requiring

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Rhodia, a chemical company to prevent arsenic waste from entering public waters and to clean up arsenic in land around and adjacent to the company (O'Rourke Ex. 11).

(w) After receipt of the EPA's November 16, 1971 letter, Ventron retained Metcalf & Eddy to conduct a soil sampling program along the wasteline and at the pipe depths (O'Rourke Ex. 13).

(x) Ventron simultaneously resolved to investigate internally other potential sources for the residual mercury.

(y) On November 24, 1971 the DEP notified Ventron that based on samples taken November 4, 1971, its final effluent was unacceptable, particularly with respect to the mercury content (DV-681).

(z) The DEP warned Ventron that if the final effluent was not improved significantly, "appropriate action would be taken" (DV-681).

(aa) In response to the DEP, Ventron reported the EPA's review and surveillance of its mercury recovery system and invited DEP personnel to visit the plant to discuss the DEP's goals and objectives as they applied to Ventron (letter dated December 22, 1971, Wilson Ex. 2).

(bb) Data obtained during the Thanksgiving shutdown demonstrated that by November 1971 total mercury discharge was virtually unaffected by the absence of mercurial processing (DEl-CCC with daily effluent log annexed).

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18. Ventron Conducts Dye Test on Sewer Lines.

(a) The sewer lines carried all Ventron effluent, mercury and non-mercury bearing process streams, for discharge to Berry's Creek. In late 1970 or early 1971, Ventron's Barry Faye conducted a test in an effort to trace the sewer lines (Faye Tr. III at p. 69).

(b) Faye inserted fluorescent dye into floor drains and underground lines and looked for evidence of the dye downstream (Faye Tr. III at pp. 69-70).

(c) Between August and December 1971, Ventron excavated at points along the underground pipes at the Ventron property to determine the origin of certain sewer lines (Faye Tr. III at p. 68).

(d) During an examination of the excavation, Faye found evidence of the dye outside the sewer line (Faye Tr. III at p. 72).

(e) When Ventron opened up an excacation which contained some water, there appeared some evidences of the fluorescent dye (Faye Tr. III at p. 74).

(f) The dye observations were adjacent to known sewer lines on the Ventron property (Faye Tr. III at p. 74).

(g) Ventron admits that it could not explain how the evidence of the dye which had been inserted into the sewer line reached outside the sewer line (Faye Tr. III at p. 72).

19. January 1972: Metcalf & Eddy Soil Study.

(a) On or about January 5, 1972 Craig Testing Labora-

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tories, Inc. commenced sampling at locations at the Ventron site (O'Rourke Ex. 14).

(b) Soil samples, taken at depths of 3-1/2 to 5 feet, together with samples of groundwater which accumulated in the test borings, were obtained by Metcalf & Eddy personnel. (O'Rourke Tr. at p. 59)

(c) The soil sites were selected to be close to drainage lines and near major process areas (O'Rourke Tr. at p. 59). The purpose was to investigate the mercury leaching from the groundwater and contributing to the discrepancy in total mercury emanating from the plant (O'Rourke Tr. at pgs. 84-85)

(d) The soil and groundwater samples were sent to Metcalf & Eddy's Boston laboratory for analysis (O'Rourke Ex. 14).

(e) Metcalf & Eddy issued its laboratory report on or about January 18, 1972.

(f) The groundwater data is based on total mercury.

(g) The groundwater data revealed mercury content in the range from 5500 ppb to 2,000,000 ppb (DW-13; DW-14).

(h) The lowest ranges were found in those sampling points located furthest from the mercury processing activities (O'Rourke Ex. 14, sample location plot plan annexed thereto).

(i) The lowest level of mercury in groundwater were found in samples obtained from that portion of the site, an area presently designated as Lot 10A, the U.S. Life property.

(j) The highest levels of mercury in groundwater were

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reported from samples obtained along the eastern perimeter of the property and at the southeast corner, an area presently designated as Lot 10B, the Wolf property.

(k) Metcalf & Eddy's analysis of mud samples indicated mercury levels ranging from 5 ppm to 375 ppm.

20. Ventron Meets with EPA; Discussion of Residuals and Other Sources of Contamination.

(a) By letter dated January 14, 1972, Ventron issued its analysis of the "apparent anomaly" between the mercury content of the total plant discharge and that of the effluent immediately after treatment (DE1-WWWWW).

(b) Ventron acknowledged that inadequate sampling and/or analysis did not substantiate "the significant difference" between these data (DE1-WWWWW).

(c) Ventron concluded that there were "unexpected mercury inputs." (DE1-WWWWW)(Hoffman Tr. at pgs. 30-31).

(d) In its letter of January 14, 1972, Ventron cited five possible sources of mercury contamination:

1. infiltration of groundwater contaminated with mercury leached from deposits in the soil into the underground waste-line; 2. surface runoff into storm sewers of rainwater contaminated with mercury from surface deposits; 3. surface run-off of contaminated overflow from collecting pits and basins; 4. leaching of residual mercury in the wastelines; and 5. discharge of contaminated "non-mercurial" streams into the waste system (DE1-WWWWW; Hoffman Tr. at p. 31).

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(e) Ventron discussed each of the possible sources of contamination, with one exception, that of soil contamination.

(f) The discussion pertaining to contaminated groundwater infiltration is absent from Ventron's letter of January 14, 1972.

(g) On January 17, 1972 Ventron representatives and Dr. O'Rourke met with EPA officials in New York to discuss the reason for the continued and unacceptably high levels of mercury discharge in total plant effluent despite Ventron's improved treatment of its mercurial wastewater streams (DW-155).

(h) Ventron's Barry Faye orally presented Ventron's explanation of the possible sources of contamination as outlined in the January 14, 1972 letter (DW-155; DE1-WWWWW).

(i) Ventron identified two major sources of additional mercury.

(j) One possible source was previously unsuspected input into the sewer system from the boilers (DE1-WWWWW; DW-155).

(k) The other possible source was contamination of existing lines and basins (DE1-WWWWW; DW-155).

(l) The EPA raised the issue of contamination of the soil around the Ventron buildings (DW-155).

(m) Ventron (Bernstein) stated it would be amenable to sealing the ground with tar or oil to alleviate the mercury discharge problem (DW-155; O'Rourke Tr. at pgs. 87-88).

(n) O'Rourke and Bernstein discussed chemical mobili-

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the soil to prevent migration. Several possible ap-
ere discussed, along with the possibility of removing or
of the contaminated soil (O'Rourke Tr. at pgs. 88-89).

(o) O'Rourke raised the question whether the problem is
niform contamination or isolated spots of severe contami-
(O'Rourke Ex. 15).

(p) Ventron admitted that it was processing continuously
g quantities of mercury (DW-155).

(q) Ventron conceded that despite increased mercury
mercury discharges were decreasing in treated effluent but
higher at the weir (where total mercury was measured)
O'Rourke Ex. 15; DE1-WWWWW).

(r) The discharge at the weir was 10 times higher than
processed effluent (O'Rourke Tr. at pp. 84-85).

(s) By letter dated January 26, 1972, Dr. O'Rourke
tted to Ventron the Metcalf & Eddy laboratory report and
aig Testing Laboratories, Inc. boring report (O'Rourke Ex.

(t) By letter dated February 24, 1972, Ventron forwarded
aig Testing and Metcalf & Eddy documents to the EPA (DV-44).

(u) Dr. O'Rourke did not do any significant research in
iterature on the subject of mercury in soil. He did consult
Dr. Sawyer of Metcalf & Eddy regarding the types of mercury
unds that were deposited and how they might be leached from
soil. Dr. O'Rourke concluded from his discussions and general

ground that soluble mercury would be transported by the ground-
r and that surface water percolating through the soil would
e migration of soluble mercury (O'Rourke Tr. at pgs. 71-72).

(v) Ventron's chief chemist, B. Magier, was not asked opinion relating to the mercury in the soils at the Ventron e (Magier Tr. at p. 23).

EPA Responds to Ventron's Soil and Groundwater Study.

(a) On or about March 3, 1972 EPA's legal advisor, liam Horner, requested assistance from EPA's technical staff determine whether Ventron's soil and groundwater study had ered their recommendations in the matter (DE1-JJJJJJJJ).

(b) On or about March 15, 1972, Marcus Kantz, an EPA mical engineer, considered the data and recommended chemical cessing to retard leaching of the mercury into the discharge e (DE1-MMMMMMMM).

(c) Kantz recommended that Ventron extend its abate- t efforts to include trapped mercury in the soil (Id.).

(d) For the period December 13, 1971 through February 1972, the mercury level in Ventron's treated plant effluent raged 0.038 lbs./day while total plant effluent averaged .36 s./day.

(e) The total mercury discharge into Berry's Creek, cluding treated and untreated wastes, averaged 4.0 lbs./day.

(f) Kantz recommended that Ventron be encouraged to ve their ground preceded by chemical immobilization of the apped mercury.

(g) By letter dated March 31, 1972, the EPA issued its official response to Ventron's mercury sources analyses and abatement plan (letter dated January 14, 1972) and its groundwater and soil data (Metcalf & Eddy Report; letter dated February 24, 1972). (DW-153).

(h) In the letter, EPA acknowledged the efforts made by Ventron in enacting this abatement program (DW-153).

(i) EPA advised Ventron that it devoted insufficient attention to the area of groundwater infiltration.

(j) EPA requested Ventron to "evaluate as soon as possible the feasibility of chemically immobilizing the mercury trapped in the soil around [the] plant and then paving this over." (DW-153)

(k) After March 1972, there is no evidence that Ventron required Dr. O'Rourke's services in evaluating the ground water data or in preparing a report on the groundwater data. Dr. O'Rourke was not consulted with respect to the EPA's March 31, 1972 letter (O'Rourke Tr. at pgs. 103-106; 133).

(l) By letter dated April 25, 1972, Ventron submitted its interim progress report to EPA on its abatement program (DW-154).

(m) Ventron reported that its efforts to control spills onto the ground, curb overflowing pits, and eliminate a previously unidentified input at basin "C" located between Buildings 13 and 18 had reduced the volume of plant discharge from values in excess

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of 100,000 gallons to 50,000 gallons (DW-154; Hoffman Tr. at pgs. 53-54).

(n) Ventron admitted that this reduction of effluent quantity did "[n]ot necessarily" indicate a change in mercury quantity of the plant effluent (Hoffman Tr. at p. 54).

(o) Ventron reported that after the conversion of the vacuum pump and plugging at basin "C", the mercury in the treated and total plant discharges appeared to be equalizing (DW-154).

(p) Ventron stated that total plant effluent had decreased by one order of magnitude (DW-154).

(q) Without further explanation, Ventron asserted that subsurface infiltration appeared as a minor source of mercury in total plant discharge (DW-154).

(r) Ventron advised EPA it was "inclined to believe that chemical soil immobilization and yard paving [would] not be required." (DW-154)

22. March 1972-October 1972: Ventron's Residual Problems Persist

(a) Ventron reported to EPA excessive mercury discharges in its final plant effluent between April 11, 1972 and April 18, 1972 (DE1-HHHHHH).

(b) Ventron claimed that an atypical mix of chemicals and desludging of the line caused the objectionable mercury levels (DE1-HHHHHH).

(c) Ventron informed EPA of the installation of a large sewerage tank as a "failsafe" system in preventing further high levels.

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(d) EPA expressed belief that the corrective measure oubtedly reduce the chance of objectionable mercury dis- manating from the treatment facility but that the tank affect mercury from residual sources (DE1-NNNNNNNN 24, 1972).

(e) EPA expressed its intention to urge Ventron to in- a plan immediately to reduce residual mercury discharge inue close supervision of Ventron's activities (DE1-).

(f) In or about June 1972 Ventron discovered a leakage minated effluent in the vicinity of buildings 13A and 18.

(g) Within Ventron, personnel suggested certain correc- asures, including the addition of a tile pipe and a pump to the stream into the treatment system (Memorandum dated June 2).

(h) Ventron projected completion of the corrective meas- August 1972 (Memorandum dated June 27, 1972).

(i) Ventron continued to report directly to the EPA its al plant discharges.

(j) On or about September 19, 1972 EPA's William Horner ntron's Barry Faye held a telephone discussion (DW-172 dated ber 21, 1972).

(k) During the telephone conversation of September 19, Faye did not reveal the discovery of the leakage from build- 8.

(l) After September 19, 1972, EPA resolved that Ventron need only submit its daily effluent discharge report on a monthly basis.

23. Ventron Evaluates Economic Feasibility of Wood Ridge Plant.

(a) In or about June 1972 Ventron issued a "Long Range Facilities Plan 1972-1977." (Report dated June 1972)

(b) The report concluded: "[T]he plant can no longer meet current mercury exposure limits -- which were tightened in the last six months. An intensive cleanup and housekeeping campaign provided perceptible but insufficient improvement; the plant is a veritable Aegean stable of residual mercury."

(c) Periodic visits by representatives of Ventron's workers' compensation carrier noted mercury in the soil around the recovery still on the east side of the plant (Bratt. Tr. at p. 73).

(d) Ventron reported in its June 1972 assessment that "environmental control problems are severe, mainly due to mercury." (Report dated June 1972)

(e) Joseph Bernstein, executive vice-president of Ventron and co-author of the report, recommended continuing operations at Wood Ridge and investing in pollution projects "to keep ahead of judicial enforcement standards" and "only when forced to do so."

(f) Bernstein urged full evaluation be given to the proposal to sell Wood Ridge prior to installing any major new facilities.

(g) On or about September 12, 1972, Ventron issued its Long Range Environmental Protection Plan (DW-19).

(h) In its September 1972 report, Ventron acknowledged that mercury content of total plant discharge still often exceeds federal standards (DW-19).

(i) Ventron attributed the excessive discharges to a known leakage near building 18.

(j) In its September 1972 report, Ventron recommended suspension of future planning at the plant until remedial measures were installed and the severity of the problem assessed. (DW-19)

(k) Ventron forecasted that between 1973 and 1975 it would be forced to cease its current practice of dumping to Berry's Creek and either establish connection to the Bergen County Sewer System or install added treatment facilities (DW-19).

(l) Ventron projected capital expenditures for environmental control at its plant between 1973 and 1975 in the range of $120,000 and $180,000. (DW-19).

(m) On October 30, 1972, P.L. 92-500, the new federal Water Pollution Control Act, became law.

24. February 1972: Sports Authority Discovers Mercury in Berry's Creek Tidal Marsh

(a) In 1971 the New Jersey Legislature established the New Jersey Sports and Exposition Authority (hereinafter, the "Sports Authority") (M-3).

(b) The Sports Authority was directed to effectuate

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the development of a recreational facility in the Hackensack Meadowlands District.

(c) The Sports Authority commissioned Jack McCormick & Associates to review the environmental conditions and resources of the Hackensack Meadowlands, review the proposed site alternatives and examine and assess proposed construction plans for the Sports Complex for its environmental impact.

(d) A draft environmental impact statement was circulated in June 1972 (M-3).

(e) Preliminary sampling conducted in the course of McCormick's evaluation of water quality in the Hackensack Meadowlands revealed the presence of mercury "in unusually high concentrations in the muck beneath the surface and in the channels of Berrys [sic] Creek tidal marsh." (M-3 at p. 33).

(f) "These persistent toxic pollutants [chromium, arsenic and mercury] which represent long-term public cost of unregulated discharge by private industries," McCormick reported, "appear to be contained principally, in the upper 2 to 4 inches of the substrate." (M-3 at p. VII-11).

(g) Berry's Creek Tidal Marsh is located approximately two miles downstream of the property (McCormick Tr. at pgs. 25-26).

(h) Sediment samples were collected in the Tidal Marsh on June 5, 1972 and on June 15 and 16, 1972 (M-5 at p. 39; M-3 at p. VII-5).

(i) Results of the June 1972 mercury analyses on the

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sediment samples indicated concentrations in the upper two inches in the range of 2.3 to 26.0 ppm (M-5 at pgs 39; 41).

(j) At the depth of four to six inches, mercury concentrations in the June 1972 sediment samples ranged from 7.0 to 208.0 ppm (M-5 at pgs. 36; 41).

(k) Intensive water quality surveillance did not commence until January 1973 (M-5 at p. 36).

(l) "The mean concentration of mercury in the Berrys [sic] Creek tidal marsh (based on 30 analyses) is 34.13 mg./kg. [ppm] or more than seven times as great as the highest concentration reported" in previous studies (M-5 at p. 39).

(m) On or about July 10, 1972 the Hackensack Meadowlands Development Commission (HMDC) and the DEP commenced public hearings on the draft environmental impact statement (M-5 at p. 24; McCormick Tr. I at p. 37-38).

(n) During the July 1972 public hearings on the proposed development of the Sports Complex, it was acknowledged that the Berry's Creek Tidal Marsh, consisting of 130 acres, was contaminated with mercury (M-7A and M-7B).

(o) "The mercury problem is perplexing and no final plan has been formulated to deal with the problem. There is no little question about the severity of the contamination . . ." (M-5 at p. 43).

(p) Ventron (Faye) was aware of the contamination of the wetlands (Faye Tr. III at p. 162).

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25. 1973: Ventron Continues to Report Effluent Discharges in Excess of of Federal Standards

(a) By letter dated March 14, 1973, Faye transmitted the February effluent report to the EPA (DE1-BBBB).

(b) Ventron's daily plant effluent discharge report for February 1973 revealed excessive discharges of mercury in total plant effluent on February 5, 17 and 18, 1973 (DE-1-ZZZ).

(c) On February 5, 1973 Ventron reported the mercury level in treated effluent was 0.012 lb/day while the mercury level in total plant effluent was 0.820 lb./day (DE-1-ZZZ).

(d) In the March 14, 1973 letter, Faye stated that the excessive mercury discharges of February 5, 1973 was caused by contaminated sediment contained in a collapsed storm sewer (DE1-BBBB).

(e) Faye reported that the collapsed sewer had been repaired on March 13, 1973 (DE1-BBBB).

(f) Faye attributed the excessive mercury discharges in total plant effluent for February 17 and 18, 1973 to residuals in floor trenches (DE1-BBBB).

(g) Faye explained that prior to the discharges of February 17 and 18, 1973, the floor trenches were flushed out with water (DE1-BBBB).

(h) Faye reported that "[i]t was not realized that: a. the sludge contained mercury, and b. the discharges of the trenches bypassed the mercury treatment system." (DE1-AAAA).

(i) Faye proffered the same explanation to the DEP (DV-79).

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(j) By letter dated April 18, 1973, the DEP expressed its concern about the discovery of the floor trenches as sources of increased mercury discharges and directed Ventron to reroute the trench discharges onto the treatment system (DW-31).

(k) In the addendum dated May 1, 1973 to its monthly report, Ventron informed the DEP that it had rerouted the trenched discharges into its plant treatment system (DW-32).

(l) By letter dated May 15, 1973, Faye transmitted to EPA Ventron's daily effluent log for the period March 26, 1973 to April 29, 1973 (DE-1-4F).

(m) For the weeks of April 16 and April 23, 1973, Ventron reported higher mercury levels in total plant effluent than in treated effluent and in excess of federal standards (DE-1-4E).

26. January 1973 to February 1974: Ventron Sells the Business of Wood Ridge Chemical Corporation and the Ventron Site:

(a) No action to sell the plant was taken by Ventron immediately after the June 1972 and September 1972 assessments.

(b) In January 1973 Robert Petersen replaced Hoffman as plant manager (Petersen Tr. at p. 6).

(c) Sometime between the end of 1972 and beginning of 1973 the negative factors outweighed the positive factors and Ventron decided to discontinue the operation (Derderian Tr. III at pgs. 238-242).

(d) In the Spring of 1973, the decision was made to sell Ventron-Wood Ridge (Bernstein Tr, 9/16/76, at p. 133).

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(e) The soil contamination problem was pertinent to the opinion of some Ventron officers (Derderian) in determining to sell the property (Derderian Tr., 8/16/77, at p. 213-17).

26.1 Andover Realty Inc.

(a) On February 7, 1973, Leonard Gero of Andover Realty Inc., met with Bernstein (Ventron) to discuss the value of the land at the Ventron site. By letter dated February 8, 1973 Andover gave its opinion of a proper initial listing price of the property.

(b) Between February 1973 and July 1973, Ventron had dealings with other prospective purchasers (see paragraphs 26.2, 26.3, 26.4 and 26.5).

(c) On July 30, 1973 S.K. Dederian of Ventron spoke with a representative of Andover and advised Andover that at that time an offer of "$550-600" thousand dollars would make Andover "a leading bidder," but that an "agreement was imminent with someone else."

(d) On October 29, 1973, Ventron (Bernstein) sent Andover a plot plan of the Wood Ridge Chemical site.

(e) On December 20, 1973, Andover wrote Ventron to advise that it might have a buyer for the site in Scientific Chemical Processing of Carlstadt, New Jersey (DW-79).

(f) The same letter reflects that Andover had requested information on the particulars of the site from McCarter & English, Ventron's attorneys in Newark, New Jersey.

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26.2 Buschman-DiCioccio

(a) By letter dated May 4, 1973 (DW-47), Buschman-DiCioccio & Co. wrote Bernstein enclosing a copy of the Hackensack Meadowlands offical zoning map and stated that "I hope this information will be of some assistance to you in your determination of the property."

(b) By letter dated May 30, 1973, Buschman-DiCioccio advised Bernstein that it had received a copy of the title guarantee which it had passed onto potential purchasers for review. A question was raised whether any part of the property fell within the riparian rights claims of the State of New Jersey. Derderian advised Buschman-DiCioccio on May 31, 1973 that its New Jersey lawyers (McCarter & English) were looking into the matter (DW-95).

(c) Carmen DiCioccio visited the plant with Petersen on several occasions (Petersen Tr. at p. 22).

(d) By letter dated August 8, 1973 from the firm of Crummy, O'Neill, Del Deo & Dolan to Ventron, a proposed agreement to purchase on behalf of Arrow Carrier Corporation was made, which offer had been arranged through Buschman-DiCioccio as broker.

(e) The offer of Arrow Corporation was modified by Bernstein and the modified proposal appears as Exhibit DW-75.

(f) Among the provisions modified was one dealing with the standards of acceptability of test borings to be performed by the purchaser.

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(g) By letter dated August 24, 1973, Buschman-DiCioccio sent to Ventron "the copy of the boring report, as requested." (DW-89)

(h) Ultimately, Arrow could not purchase the property because of zoning problems (Bernstein Tr. 2/9/77, at pgs. 312-313).

26.3 Masi-Boyle

(a) Prior to November 8, 1973, Ventron sent to Fred Torstrup of Masi-Boyle Associates a copy of the plot plant. Masi-Boyle acknowleged that it was discussing the property with a number of developers, was giving them copies of the plot plan and showing the property "after clearance with Mr. Petersen."

(b) By letter dated November 21, 1973, Masi-Boyle forwarded to Peterson a proposed offer on behalf of Keith Realty Corporation.

26.4 Others

(a) In addition to the persons and companies identified in paragraphs 26.1, 26.2 and 26.3, Ventron had dealings with Lehman Associates (letter dated October 2, 1973) and Roy Lucas of James E. Hanson & Co., (letter dated August 24, 1973).

(b) Lucas was a former Ventron employee and college classmate of Ventron's Bernstein (Bernstein Tr., 2/9/77, at p. 310).

(c) On August 24, 1973 Ventron (Bernstein) wrote Lucas as follows (DW-ZZ):

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"Attached is the information we discussed, plus some additional detail which should be of interest."

26.5 Wolf

(a) By letter dated May 17, 1973, Wolf Realty (B. Scharf) wrote Venton (Peterson) to acknowledge its listing of the property for sale (DV-2; Wolf Tr., 9/23/76, at pgs. 125-26).

(b) By letter dated May 23, 1973, Ventron informed Wolf Realty the property was not to be listed with it as broker (DV-3; Bernstein Tr., 2/9/77, at pgs. 281-82; Wolf Tr., 9/23/76, at p. 127).

(c) Sometime after May 23, 1973, Wolf called Ventron (Bernstein) about the property (Bernstein Tr., 2/9/77, at p. 282).

(d) Sometime prior to June 6, 1973, Wolf made an oral offer to Bernstein (Bernstein notes dated June 6, 1973).

(e) In June and July 1973, Ventron (Petersen) obtained two cost estimates from two separate demolition contractors for clearing the Ventron property of buildings. The purpose was to help Ventron in analyzing any offers on the property (Petersen Tr. at pgs. 43-45; 46-48).

(f) On June 13, 1973, Wolf and Bernstein had a further conversation regarding offers for the purchase of Wood Ridge (memorandum dated June 15, 1973). On one or two occasions, Rovic (Andrews) toured the plant with Petersen (Petersen Tr. at pgs. 22-23) On these occasions Petersen told Andrews the plant

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was being shut down because of air emission standards and OSHA standards (Id. at pgs. 23-24).

(g) Shortly before July 9, 1973, Wolf spoke by telephone with Bernstein (Ventron) (Wolf Tr., 9/23/76, at pgs. 141-42). By letter dated July 9, 1973, Wolf made a written offer to purchase the Ventron property (DW-4).

(h) By letter dated August 10, 1973, Wolf supplemented his offer (DW-5).

(i) By letter dated August 13, 1973, Bernstein advised Wolf that his offer was being passed around the executive committee at that time (DV-6; DV-13).

(j) By letter dated August 14, 1973, Ventron inquired of Pioneer Title Guarantee Company whether a policy similar to that existing on the property could be issued to a subsequent buyer, "assuming no major changes have taken place in the past five years." (DW-134)

(k) By a letter dated August 16, 1973, Pioneer advised Ventron that under certain conditions the same title guarantee could be issued to a successor. The letter pointed out, however, that there was a riparian rights claim by the State involving the title, which was excluded from the policy.

(l) Wolf asked Ventron (Bernstein) for any information it had on soil bearing tests (Bernstein Tr., 2/9/77, at pgs. 300-302).

(m) On August 17, 1973 Frank Wilson reported to

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Bernstein that Jim O'Rourke of Metcalf & Eddy had found the Craig test data showing borings to five feet in depth (Memorandum dated August 17, 1973).

(n) By letter dated August 24, 1973, Bernstein sent a copy of the Craig test boring report to Wolf giving "permission to contact Craig Testing Laboratories for any additional information they might have which is not in the report." (DV-14)

(o) By the same letter of August 24, 1973, Bernstein proposed a form of sales contract to Wolf for comments (DV-14).

(p) Sometime after August 1973, Wolf told Bernstein the soil tests (Craig) were of no value and he would make his own borings (Bernstein Tr., 2/9/77, at p. 316).

(q) Wolf sent a copy of the Craig Testing Laboratories report to Rutenberg/Kolaranda, his architects. The architects responded that the boring report was "valueless " (Wolf Tr., 8/27/77, at pgs. 1004-1005; Wolf Tr., 11/23/76, at pgs. 235-238)

(r) By letter dated September 13, 1973, Wolf submitted a formal draft of agreement for review and approval by Ventron (DV-32; Wolf Tr., 11/23/76, at pgs. 259-61).

(s) By letter dated October 15, 1973, Ventron requested the firm of McCarter & English to represent it and determine if any portion of the site was within the State's riparian claims (DW-122).

(t) Ventron had used McCarter & English as its

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attorneys for New Jersey several times over the previous two years. There had been a boundary dispute with Velsicol and other legal questions.

(u) By letter dated October 22, 1973, McCarter & English advised Ventron that a portion of the site was within the State's claims.

(v) On November 1, 1973, Julius Poppinga, Esq. spoke with Mr. Derderian of Ventron and advised him that McCarter & English also had in the past represented Robert Wolf. Derderian advised Poppinga that "we'll do all negotiations."

(w) On November 2, 1973, Wolf sent to McCarter & English for its review his proposed form of option agreement with Ventron (DV-33; Wolf Tr., 9/23/76, at pgs. 176-178; Wolf Tr., 11/23/76, at pgs. 265-270).

(x) On February 5, 1974, Wolf met with Derderian and Bernstein in Beverly, Massachusetts, their only face to face meeting, and there executed the option agreement (DV-42; Wolf Tr., 8/24/77, at pgs. 815-16; Wolf Tr., 12/1/76, at pgs. 373-74; 382).

26.6 The Sale of Ventron's Mercury Business to Troy Chemical Co.

(a) Sometime prior to November 1973, Ventron entered into negotiations with Troy Chemical Company, Newark, New Jersey, to sell the mercury chemical business of WRCC to Troy (Derderian Tr. III at pgs. 192-93).

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(b) By letter dated November 29, 1973, Ventron sent Troy's attorney the executed copies of the acquisition agreement (DW-139).

(c) On December 12, 1973, the sale of the business closed effective January 1, 1974 (Derderian Tr. III at pgs. 193-194).

(d) From December 12, 1973 through approximately the end of March 1974, Ventron continued to produce mercury chemicals for Troy at the Ventron site.

(e) Between December 1973 and May 1974, the industrial processes were transferred to Troy's location and many pieces of equipment were removed from Wood Ridge and transported to Troy (Ventron Answer to State Interrogatory No. 4; Petersen Tr. at pgs. 51-52).

(f) After April 1974, certain material was produced at the Ventron site and stored at Troy.

(g) At the end of March 1974, some mercury production operations were terminated. There were some sublimate and calomel operations that Ventron ceased on April 4, 1974 (Ventron Answer to Wolf Interrogatory No. 4).

(h) All organic mercury manufacturing at Ventron ceased on April 15, 1974 (Ventron Answer to Wolf Interrogatory No. 4).

(i) All inorganic operations at Ventron ceased on April 16, 1974 (Ventron Answer to Wolf Interrogatory No. 4).

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(j) On May 22, 1974, Ventron cancelled its workers' compensation coverage, effective May 3, 1974 (Van Houten Tr. at p. 7).

27. March 1974: Rovic Construction Co. Arranges for Demolition.

(a) In March 1974, Rovic Construction Co. (hereinafter, "Rovic") solicited bids for demolition of the Ventron buildings according to plans and specifications.

(b) Rovic entered into a contract for demolition with V. Ottilio & Sons (DV-19).

(c) On March 27, 1974, Ventron gave written permission for the demolition contractor to leave its equipment on site "outside the battery limits" (DW-128). Rovic so informed Ottilio (PO-14).

28. April 1974: Wolf Exercises the Option.

(a) On April 3, 1974, Wolf requested an extension of time on the option because of delays in financing commitments (Memorandum dated April 3, 1974).

(b) On April 8, 1974, Ventron executed an extension of the option to April 22, 1974 (Letter dated April 4, 1974).

(c) By letter dated April 19, 1974, Wolf exercised the option (DV-43; Wolf Tr. 12/1/76 at pgs. 410-12).

29. March-April 1974: Ventron Terminates Operations and Purports to Clean Up the Plant.

(a) Between October 15, 1973 and January 1974, Ventron's house counsel, S.K. Derderian, became acutely aware of the mercury contamination problems (Derderian Tr. III at 191-92).

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(b) "Late in March [1974] mercury production operations [at the Ventron site] were terminated." (Ventron Answer to State Interrogatory No. 22).

(c) On March 29, 1974 Rovic (Joseph D'Amore) discussed with Ventron (Petersen) a pit located between buildings 18 and 3.

(d) By letter dated April 4, 1974, Petersen informed Rovic that Ventron would pump out the pit, backfill it with solid fill and cap it with concrete.

(e) Ventron sent all finished goods to Troy (Petersen Tr. at p. 51). "By April 1974 there were no longer any stocks of mercury chemicals remaining at the Wood Ridge site." (Ventron Answer to State Interrogatory No. 22).

(f) "Mercury chemical production equipment was either dismantled and transferred to Troy [Chemical Company] as part of the sale of business, or dismantled and transferred to another Ventron location in Massachusetts, or in a few cases was sold to used equipment or scrap dealers" (Id.).

(g) By letter April 17, 1974, Ventron notified the EPA that it had "liquidated" the operation.

(h) "When mercury chemical operations were terminated, equipment was flushed out [by Ventron] into the effluent treatment system. Ultimately, all of the collection pits, tanks, and lines were pumped dry, flushed with water, and this washwater run through the effluent system and analysis indicated that there was no mercury being discharged from the system or into the effluent pipes

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leading from the plant." (Ventron Answer to State Interrogatory No. 22).

(i) Ventron surveyed the property and cleaned up any mercury containing waste. Mercury wastes with any value were shipped to Troy Chemical for recovery (Petersen Tr. at pgs. 51-52).

(j) "In March 1974 [Ventron] contracted with Gaess Environmental Services for the removal and disposal of small quantites of laboratory chemicals which had no mercury value to Troy, and were of no use to anyone else. All mercury sludges for recovery were transferred to Troy, along with the recovery furnaces. There were no accumulations of mercury either in containers or in pits or tanks which were allowed to remain." (Ventron Answer to State Interrogatory No. 22; Petersen Tr. at pgs. 51-52). All materials whatsoever Petersen deemed hazardous were removed, and there were no mercury containing wastes left (Petersen Tr. at p. 53).

(k) In March and April, the plant site was "dusty and dirty" with "grey" buildings and piping (Scheil Tr. at pgs. 14-15). No witnesses recall seeing mercury on the premises. The last stage of the clean out was that the floors and trenches were washed down, and the pits were flushed out. After shut-down, the effluent treatment system was removed and delivered to Massachusetts for storage or to Ventron's Chicago plant (Petersen Tr. at pgs. 56-57).

(l) The underground lines were not sealed (Petersen Tr. at p. 57).

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(m) Through the end of April 1974, Ventron personnel were on site packing up material and equipment for Troy (Magier Tr. at p. 32).

30. The Ward Soil Report

(a) In February-March 1974, Wolf retained Joseph Ward & Co., soils engineers, to conduct a soils engineering study (Scheil Tr. I at p. 9).

(b) In April 1974, Ward took test borings to determine deep subsurface conditions (Id. at pgs. 9-10).

(c) The Ward soil report dated May 1974 (DV-D) is concerned solely with compressibility and permeability so as to determine the soil's ability to support structures, and whether it could do so by piles, footings, or other means (Id. at pgs. 10; 15; DV-D; Wolf Tr. 2/24/77, at pgs. 600-606).

(d) The purpose for which Wolf engaged Ward was to determine the quality and character of the soil with respect to bearing capacity, moisture content, and feasibility of construction of the structures on the site (Wolf Tr. 2/10/77, at pgs. 433-34).

(e) It is not custom and practice for soils engineers to test for chemicals for soil pollution. Chemical analysis is limited to situations where conditions may be injurious to the piles (if lumber) or footings (if concrete) (Scheil Tr. I at pgs. 16-17).

(f) Ward did not perform any chemical tests or analyses in connection with its report (Scheil Tr. I at pgs. 16-17).

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31. May 7, 1974 to May 20, 1974: Abandoned Chemicals and Residues On-site are Discovered by NJDOL and NJDEP.

(a) On May 7, 1974, Chester Morris, DEP inspected the Ventron site. He observed that the plant was abandoned, demolition equipment was present, and open containers of chemicals were in the laboratory and dispersed on floors and work benches throughout several vacated buildings (DV-680; DV-645).

(b) On May 7, 1974, Chester Morris, DEP, observed sludge in certain tanks on-site. He sampled water from a tank. Subsequent analysis revealed that it contained 20 ppb mercury (DV-645 dated May 21, 1974).

(c) On May 7 or 8, 1974, representatives of New Jersey Department of Labor (NJDOL) contacted the demolition contractor, Ottilio, about chemicals on-site and scheduled a meeting for May 9, 1974 regarding demolition procedures. (Van Houten Tr. at p. 10; DNJM-2).

(d) On May 8, 1974, Ventron placed a telephone order to Chem-Trol Pollution Services, Inc., a subsidiary of Gaess Environmental Services, to pick up some drums of chemicals in building 18 (Earthline-5).

(e) On May 9, 1974, Chem-Trol removed the laboratory waste on behalf of Ventron (Earthline-2 dated May 31, 1974, Invoice No. 4748).

(f) On May 9, 1974 representatives of NJDOL met with Ottilio and directed, by formal order (PO-4), that "no demolition is to proceed until all hazardous chemicals and residues have been

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removed from buildings" and further ordered that the buildings "be sufficiently clean so as to prevent any hazard to workmen during demolition." (PO-4)

(g) On May 15, 1974, Forrest Griffin of Ventron reported to his superiors a conversation with representatives of DEP. He noted that DEP expressed "concern over discharging from weir box and sludge in tank," and "material on floor and in barrels." The memorandum concludes: "be prepared for several calls as per above until the wrecker has his permit!!!" (Petersen Tr. at pgs. 59-69).

(h) Ventron (Petersen) maintains that the material referred to could not have been mercury as the property was free of mercury at the time (Petersen Tr. at p. 61).

(i) On May 20, 1974, R.C. Petersen of Ventron met on-site with the DEP's Chester Morris. Morris sampled water from the final weir tank. This water sample contained 12 ppb mercury (DV-637; DV-376; report dated June 6, 1974).

(j) By letter of May 20, 1974 Petersen wrote Harry Hughes of NJDEP to advise that Ventron had ceased operations in April 1974 and no production activities of any sort were taking place. Petersen wrote:

> Prior to shut down, all mercury chemicals and mercury-bearing residues were removed from the plant. Our collecting pits formally part of the effluent control system were de-sludged and all HG-bearing waste removed. Natually there remains some residual HG in the ground and caked against the walls and structural members of the building. The buildings are to be completely demolished by the soon-to-be new owner.

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> Evidently an inspector from your department observed what was thought to be a pit full of waste and a waste water flow into an adjoining brook. This was not process waste and can only have consisted of ground and/or rain water.
>
> The property changes hands on May 20th. Either prior or subsequent to that, I will be glad to answer any questions you may have. Perhaps direct communication with your inspector would be most helpful.

n (Petersen) admits the mercury referred to as being in the was a result of over 40 years of operating with mercury on- Petersen Tr. at p. 62).

(k) The foregoing letter was not contained in the files tron Corporation as produced pursuant to discovery. A copy letter was not sent by Ventron to Wolf or any of his agents presentatives.

(l) By letter dated May 29, 1974, the DEP notified on that its inspections of May 7 and May 20, 1974 had "re- d that several containers, pits and vats of labelled chemicals emained at the site as well as one tank of sludge adjacent to butary at Berry's Creek. In addition, the inspector noted accumulations of powdered chemicals on the floors of the va- buildings during the inspections." The DEP directed Ventron nitiate all actions necessary to prevent any such waste from hing waters of the State, provide DEP with complete analysis ll materials and waste waters and residues remaining on the ises, devise a plan for waste disposal, and inform the depart- of its new plant location (DV-366; DV-633).

(m) By internal memorandum dated June 6, 1974 (DW-36) Petersen admitted to S.K. Derderian that "there were undoubtedly containers of miscellaneous chemicals and accumulated miscellaneous chemicals on the floors and walls of the buildings," at the time of the May 20, 1974 inspection by the DEP. He wrote that "all of these I have judged to be harmless and in fact, safe to leave on the vacated site." He further stated "any minor amounts of chemicals remaining on the ground and on building floors or walls will disappear as the plant continues to be demolished." He wrote that the materials referred to in the DEP's May 29, 1974 letter no longer remained and that they were cleaned up by Gaess after May 7, 1974.

(n) In his memorandum of June 6, 1974 to Derderian, Petersen suggested that Ventron respond to the DEP letter by saying there was "no action to initiate at this time since the plant is shut down; that materials no longer remain"; that there is no necessity for a plan of disposal inasmuch as Gaess had cleaned up the laboratory and miscellaneous waste, and that there was no new plant to name because the plant had been discontinued. He specifically recommended that Ventron "refrain from referring to Troy Chemical else we open Pandora's box for them." (DW-36)

(o) Ventron formally responded to the DEP letter of May 29, 1974 by letter dated June 17, 1974 advising DEP that "responsibilities for the site and any activities on it now belong with the new owners." (DV-639; DV-127).

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32. The Sale of the Property is Concluded and Demolition Commences.

(a) May 20, 1974 was the formal closing of the sale of the property and Robert Wolf became the owner of the Ventron site.

(b) Shortly after the meeting of May 9, 1974 with NJDOL personnel concerning demolition (¶31(f)), Rovic had contacted Bernard Magier, former chief chemist with Ventron and employed his services as a consultant.

(c) Magier became responsible for inspecting and clearing each building for demolition (D'Amore Tr. at pgs. 17-18; Magier Tr. at p. 33). Magier instructed the men in the removal of various containers and bottles from buildings.

(d) Magier saw some non-mercuric compounds in bags which were harmless. There were no piles of material anywhere. (Magier Tr. at pgs. 34; 35-37).

(e) By letter dated May 20, 1974, Magier reported certain recommendations concerning demolition of the existing buildings (PO-9; Magier Tr. at p. 34) Magier recommended that buildings 2, 4, 5, 6, 7, 14, 15, 16, 17, 19 and 22 could be demolished without any preventive action. He further recommended that buildings 3, 9, 13, 18 and 20 required precautionary measures as specified in his letter.

(f) On May 22, 1974, representatives of Rovic, in the presence of Magier, met with representatives of NJDOL. By formal order of the same date the NJDOL authorized the demolition of buildings 2, 4, 5, 6, 7, 14, 15, 17, and 22 "without any prelimi-

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nary work." It authorized the demolition of buildings 3, 9, 13, 16, 18, 19 and 20 on the condition that any remaining chemicals be removed and the buildings be watered down prior to the commencement of demolition upon certification of Magier that the buildings were "acceptable for demolition." (PO-10)

(g) On May 22, 1974 demolition of the buildings commenced (Ottilio Tr. at p. 9).

(h) By letter dated May 30, 1974, Magier informed Rovic's John Andrews that necessary precautionary measures had been taken with respect to building 8, 3, 16 and 20 and that it was his opinion that these may be demolished without any hazard (P-61; Magier Tr. at pgs. 40-43).

(i) By letter dated June 5, 1974, Andrews formally advised the NJDOL of Magier's conclusion.

33. May 30, 1974 to June 12, 1974: An Oil Spill in Berry's Creek Sends NJDEP and USEPA Representatives to the Ventron Site.

(a) Demolition of the Ventron site was in progress when on May 30, 1974 Hackensack Meadowlands Commission (HMDC) personnel reported an oil slick in Berry's Creek. Between May 30 and May 31, HMDC personnel appeared to trace the oil to the Ventron site (Memorandum dated June 21, 1974; DV-306, dated August 6, 1975).

(b) On June 3, 1974 Coast Guard personnel observed oil in Berry's Creek.

(c) On June 4, 1974, Andrews of Rovic contacted Tom Scheil of Joseph S. Ward Co., Inc. (hereinafter, "Ward") to request

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water samples of the discharge from the construction site and from Berry's Creek. Andrews acknowledged to Ward that Rovic "may possibly be cited for polluting Berry's Creek with oil from demolished tanks" but added he did not "feel Rovic was causing the problem." The conversation related strictly to oil, not to mercury (Scheil Tr. II at pgs. 157-158; Scheil Tr. I at p. 20; Ward Memorandum dated June 4, 1974).

(d) On June 4, 1974, Rovic contacted U.S. Testing Co. to sample and inspect the premises for oil.

(e) On June 5, 1974 U.S. Testing Co. inspected the site (U.S. Testing Co.-5).

(f) Rovic was eventually cited for the oil spill by the Coast Guard and a fine was paid.

(g) On June 7, 1974, HMDC personnel observed a red chemical, possibly mercury, in the water in Berry's Creek. They immediately contacted the NJDOL and the Coast Guard and went themselves to the Ventron site.

(h) On June 7, 1974, Andrews of Rovic received a telephone call from the USEPA complaining that this time there was runoff of chemicals from the site. NJDEP, on the same date, also called to complain of chemicals washing down from the site.

(i) On June 7, 1974, the DEP dispatched personnel to the Ventron site to take various samples of Berry's Creek upstream and downstream of the demolition site (DE2-UUU, dated June 19, 1974; DV-534).

(j) On June 7, 1974, Andrews of Rovic called Petersen of Ventron about the statements made by EPA and DEP personnel. Petersen told Andrews that there were no dangerous chemicals around the site, that Gaess had removed from the site all such chemicals.

(k) On June 7, 1974, Ottilio found a five-gallon drum of chemicals on site (DV-68).

(l) By telegram dated June 10, 1974, the DEP ordered demolition to cease and desist, citing an alleged illegal discharge of June 7, 1974. This telegram (DV-F) was read to Rovic (Andrews) over the telephone by David Longstreet of the DEP who in turn relayed it to Wolf (Wolf Tr., 3/4/77, at pgs. 647-52).

(m) On June 10, 1974, Rovic commenced to clean out again all settling pits and catch basins. Wolf retained Gaess Environmental Services for these services (DV-F; P-45).

34. The Meeting of June 12, 1974.

(a) On June 12, 1974, there was an on-site meeting among representatives of Rovic, the DEP and the EPA to establish the requirements of the [DEP's] telegram order of June 10, 1974 (P-43; P-59; DV-636). Robert Petersen was present on behalf of Ventron.

(b) At the meeting, Petersen discussed David Longstreet's letter of May 29, 1974 [paragraph 31(l), supra.] and advised the DEP that the matter was now the responsibility of Wolf and Rovic (Petersen Tr. at p. 71; DW-127).

(c) Petersen asserted that the sludge on-site contained less than one ppm mercury (DW-127; P-43; P-59; DV-636).

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(d) The DEP obtained a sample of the sludge on-site. Analysis showed that it contained 17,700 part per billion mercury (DV-68).

(e) At the meeting of June 12, 1974, Rovic personnel and DEP and EPA personnel discussed the demolition operation and procedures to prevent contaminated runoff.

(f) At the meeting of June 12, 1974, the State DEP advised Rovic that the DEP suspected the soil may be contaminated and advised Rovic to commence an investigation of soil conditions. David Longstreet, DEP, informed Wolf there was a good deal of contamination by mercury and other chemicals but he could not be more specific than that it was extensive. He suggested Wolf retain an outside consultant to test (Wolf Tr., 8/29/77, at pgs. 1012-1014).

(g) By letter dated June 17, 1974 (P-59) David Longstreet of N.J.D.E.P. purported to summarize the agreements reached at the June 12, 1974 meeting to implement the requirements of the telegram order of June 10, 1974 (DV-43):

> At the meeting it was agreed that prior to commencing demolition, action would be taken (1) to collect and analyze run-off water; (2) to remove any remaining containers or drums of chemicals; (3) to plug drain lines; and (4) to determine mercury contamination of the soil and if contaminated, to investigate steps to remove, treat or dispose of it (DV-636).

35. Demolition After June 12, 1974.

(a) On June 17, 1974, Petersen (Ventron) visited the site "in an attempt to determine whether recent confrontations be-

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tween the EPA and Bob Wolf could expand to involve us (Ventron)." (DW-37; Petersen Tr. at pgs. 66-67). Ventron (Petersen) admitted that "Wolf's problems [with EPA] are occurring because he is required to wash down buildings prior to demolition (State DOL edict). This causes runoff into the creek carrying residual chemicals from the ground and building floors and walls." (DW-37)

(b) By its letter dated June 17, 1974, the DEP stated that Rovic had agreed at the June 12, 1974 meeting that prior to continuing demolition it would "1A. dig a lined catch basin (ditch) around the property at the end of the natural slope to collect run-off of water and other liquid. The liquid so collected must be analyzed for mercury, cadmium, zinc, petroleum, and other toxic materials as required by this Department. The analysis must be made prior to disposal of the liquid." (P-59)

(c) Rovic took exception to the provision of paragraph 1A of the DEP's June 17, 1974 letter dealing with a lined ditch. After discussion with the DEP and the EPA, it was agreed the item need not be implemented (Lepre Tr at pgs. 51-52; U.S. Testing-4, dated June 27, 1974).

(d) After June 12, 1974, the demolition contractor plugged off all drain lines (LePre Tr. at pgs. 52-53).

(e) A small earthen dam was created at the culvert to prevent water leaving the site. The water was pumped to tank trucks and transported offsite for treatment (D'Amore Tr. II at pgs. 96-97).

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(f) After June 12, 1974, Rovic collected all runoff water used in demolition and pumped it into on-site fuel storage tanks (Lepre Tr. at pgs. 14; 91-92; D'Amore Tr. II at pgs. 95-96).

(g) After June 12, 1974, Rovic employed the services of Gaess Environmental Services, Division of Chem-Trol Pollution Services, to remove by tank truck the contaminated liquids from the site (Wolf Tr. 3/4/77 at pgs. 637-641). A copy of the Gaess-Rovic contracts dated July 19, 1974 and August 8, 1974 was part of a file designated P-43 and P-44 (Wolf Tr. 3/4/77 at pgs. 641-42).

(h) Between June 13 and June 24, 1974, U.S. Testing Co. sampled water and other liquids on and about the site (U.S. Testing Co-6).

(i) By letter of June 17, 1974, the DEP confirmed that among the matters agreed to at the June 12, 1974 meeting was that prior to continuing demolition "debris from demolition prior to June 12, 1974 may be removed if desired as long as water spray is not required or used." (P-59)

(j) On either June 17 or June 20, 1974*, EPA's William Librizzi and DEP's Karl Birns conducted an on-site inspection (DV-530).

(k) At the time of their on-site inspection, no demolition activity was underway and no debris had been removed from the site (DV-530, dated June 20, 1974).

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* The Andrews letter of June 27, 1974 refers to a June 17, 1974 meeting (Ex. U.S.T.-4); William Librizzi's memorandum dated June 20, 1974 refers to a meeting of June 20, 1974 (DV-530).

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(l) At the time of their on-site inspection, Librizzi confirmed that "water discharging through the drain system and into the small wet well is being diverted from the wet well to the empty fuel tanks located on the property." (DV-530)

(m) At the time of their on-site inspection, DEP's Birns and EPA's Librizzi advised Rovic that "(1) the present method of utilizing drains and diverting run-off from the wet well to the empty storage tanks is acceptable providing sufficient pumping is available to avert overflows. In addition, the outlet pipe should be sealed. (2) Before any new demolition is initiated, a disposal method for the liquids and solids collected thus far and in future operations in the storage tanks should be developed and approved by New Jersey EPA and Federal EPA."*

(n) On June 20,1974, Birns and Librizzi advised Rovic that "operations to remove rubble thus far collected could be initiated providing that the operation is conducted in such a manner as to not cause the removal of surface soil or soils."

(o) Sometime on or about June 19, 1974, a water leak began (DV-607 dated June 6, 1974; DV-698). On June 24, 1974, HMDC called David Longstreet of the DEP to check on the status of the water. Longstreet advised HMDC:

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* John Andrews by letter dated June 27, 1974 in referring to a June 17 meeting with Mr. Librizzi and Mr. Birns states:

> "At that time, it was agreed that it would not be necessary to comply with this item [paragraph 1A of P-59], but to pump the water directly from the last catch basin of the existing drainage system on the site." (U.S. Testing - 4).

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"It is a break or hole in a pipe caught 'upstream' from Ventron which was washing onto the property. Otillio has dug a sump hole on the property 'upstream' from the actual demolition activity. The water is trapped in this plastic lined hole and is pumped directly to the nearest creek. Thus, the water is no longer washing over the property and demolition material and carrying hazardous material into the creek." (HMDC memorandum dated June 21, 1974)

(p) By letter dated June 19, 1974, Rovic advised NJDOL that Magier had certified buildings 9 and 13 for demolition and obtained Magier's certification letter dated June 16, 1974 (DW-62).

(q) On June 24, 1974, U.S. Testing took samples of liquid in the tanks (P-3).

(r) On June 27, 1974, U.S. Testing reported that water in the fuel storage tanks contain 4.6 ppm mercury (U.S. Testing Co. - 4).

(s) On July 1, 1974, there was a meeting at the job site among representatives of EPA, DEP and Rovic. Attending also on behalf of Wolf was Martin S. Tanzer of the United States Testing Co. (DV-620; DV-521; DV-3).

(t) At the meeting of July 1, 1974, Rovic advised DEP and EPA that the present capacity of 25,000 gallons of the fuel storage tanks had been reached and additional tanks would be obtained to store the water.

(u) At the meeting of July 1, 1974, DEP advised Rovic that "it doesn't care if the [Ventron] drainage system is used as

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long as no contaminated water reaches waters of the state." The DEP required all analytical data on chemical and residual materials in the drums and tanks be sent to it. At the meeting, DEP advised the parties present that "it is suspected that the soil is contaminated down to ten feet." It insisted that all soil remain on-site until analyzed.

(v) At the meeting of July 1, 1974, the DEP agreed that all masonry rubble, concrete slabs and wood can be disposed of. Rovic advised DEP it would dump the material in Hackensack or Port Newark. Rovic advised DEP that the steel debris would be sent to Jersey City.

(w) On July 1, 1974, Rovic engaged the services of Modern Transportation Company to provide additional storage capacity for potentially contaminated run-off water from the site. (DV-C, letter dated July 1, 1974 from Modern to Rovic).

(x) On July 2, 1974, Mr. Pike of the DEP visited the site for an inspection. Rovic's daily log for July 2, 1974 reports that "water under control at all times."

(y) Pike reported to Longstreet (DV-626) that on July 2, 1974 "no water was being used" in demolition. Mr. Pike observed a steel crane was knocking down a steel quonset hut (Building 19) and that no violations were observed. Rovic was pumping water from the drainage collection hole to four tanks on the site. He personally observed two men pumping out the pit. He also observed some packaged chemicals from one of the buildings (DV-626 dated July 3, 1974; DV-309 dated July 14, 1974; DV-367).

(z) On July 2, 1974, Pike instructed the Rovic workmen to correct a leaky connection in the pumping hose and advised them in the future to pump out the pit before it overflowed (DV-626; DV-367).

(aa) On July 2, 1974, the dry chemicals were placed into containers and stocked on the south side of the job site. Rovic's LePre summoned Magier who identified the material as a harmless catalytic agent (LePre Tr. at p. 101). On July 16, 1974, Ventron arranged with Gaess for the removal of the drums of the chemicals from the site.

(bb) By letter dated July 2, 1974, Martin Tanzer of U.S. Testing advised the DEP that it had been retained to perform chemical analysis of run-off water collected and stored in tanks on the site. U.S. Testing also advised DEP that Rovic had contacted handlers for the liquid waste material (DV-627).

(cc) On July 3, 1974, representatives of the DEP and the EPA visited the site to take samples at various on-site places. On that date, the demolition subcontractor was wetting and demolishing building number 9 (DV-16).

(dd) Rovic's daily log report states that on July 3, 1974 "no water leaving site." (DV-16)

(ee) On July 3, 1974, U.S. Testing Co. was on-site to take samples from the fuel storage tanks of the retained water (DV-16).

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(ff) On July 5, 1974 Longstreet, DEP, inspected the job site. On that day, Rovic recorded in its daily log that there was no water run-off from the site (DV-16).

(gg) On July 8, 1974, Michael Polito of the EPA visited the site and observed demolition in process (DV-621 dated July 15, 1974).

(hh) On July 8, 1974, Polito observed water being sprayed with a fire hose and from these washings, there was a rate of out pouring "similar to an open hose tap."

(ii) Late in the day of July 8, 1974, Ed Faille of the DEP reported Polito's observations to Rovic's LePre. LePre claimed the only water leaving the area was from storm drainage on the south end of the site being fed from a plant south of the Rovic site.

(jj) By July 9, 1974 demolition of the buildings, except for a metal quonset hut (building 19) was completed (DV-607).

(kk) By contract with Rovic dated July 19, 1974, Chem-Trol Pollution Services, Inc. agreed to dispose of "aqueous mercury waste" containing an average of 50 ppm mercury (P-44).

(ll) On July 22, 1974, Andrews (Rovic) called the DEP (Longstreet) to request permission to have Chem-Trol dispose of the liquids stored in tanks on site. The DEP (Longstreet) advised Andrews that disposal would require transportation to the Model Cities Project in upper New York state. The DEP (Longstreet) stated that this brought the matter within the jurisdiction of the

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EPA and that a letter should be written to Polito requesting permission to dispose (DV-616).

(mm) By letter dated July 23, 1974, Chem-Trol, on behalf of Rovic, wrote to the EPA requesting permission to dispose of the liquid wastes at its disposal site in upper New York state (DV-511; DV-614; DV-516).

(nn) On July 25, 1974, Chem-Trol informed Rovic that the EPA had cleared the removal of water from the site and that it would proceed to remove contaminated water from the tanks (DV-16).

(oo) On July 26, 1974, Chem-Trol commenced removal of contaminated water from the on-site storage tanks (DV-16).

(pp) Between July 24 and August 7, 1974, contaminated water was pumped from the Modern Tank Coropration storage tanks and the fuel storage tanks into the Chem-Trol tanker and removed from the site (DV-16; Wolf Tr. 3/4/77 at pgs. 693-96).

(qq) By letter dated August 8, 1974, U.S. Testing reported to the EPA that water in the holding tank, as of June 21, 1974, contained 88 ppm mercury (DV-487).

(rr) On July 22, 1974, Robert Wolf called Longstreet (DEP) to request permission to start construction. Longstreet stated that the DEP would not permit construction without completing analysis of the soil (DV-615).

(ss) By letter dated August 22, 1974, Andrews (Rovic) notified the DEP and the EPA that the N.J. Bureau of Solid Waste Management had authorized Rovic to remove the "stock-piled demoli-

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tion material and concrete slab" from the job site to a Bergen Couty Landfill (DV-605; DV-483).

(tt) Demolition was finally completed in mid-August 1974 (Ottilio Tr. 3/23/77, at pgs. 42-43).

35. July/August 1974: The U.S. Testing Co. Soil Study.

(a) On July 11, 1974 the EPA and the DEP staked out nine sites on the Ventron property for soil analysis (DV-601; DV-621; DUS-3 is a sketch of the site location).

(b) Commencing July 11, 1974, U.S. Testing, pursuant to contract with Rovic, removed core soil samples from the nine sites designated by the EPA and the DEP (DV-617 dated July 22, 1974).

(c) Soil samples were split with the EPA.

(d) U.S. Testing analyzed four soil samples from each of the nine corings, representing soil at depths of 0, 1, 2 and 3 feet, respectively, for mercury and other chemicals.

(e) U.S. Testing's analyses of the 36 samples of soil at the Ventron site reports mercury as follows:

Site	Depth	Mercury (ppm)
1	0	415
	1	215
	2	2,175
	3	185
2	0	515
	1	265
	2	315
	3	275
3	0	3,215
	1	1,825
	2	1,450
	3	930

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Site	Depth	Mercury (ppm)
4	0	7,625
	1	18,750
	2	3,425
	3	6,875
5	0	10,750
	1	13,750
	2	16,750
	3	47,000
6	0	1,825
	1	16,250
	2	5,625
	3	39,500
7	0	9,500
	1	8,250
	2	67,500
	3	1,775
8	0	182,500
	1	29,500
	2	195,000
	3	117,500
9	0	82,500
	1	9,500
	2	23,000
	3	43,000
Mean		26,900
Maximum		195,000

(f) The substance of the U.S. Testing report was transmitted to the EPA and the DEP in mid-August 1974.

(g) The soil at the Ventron site, as indicated by the soil samples tested by U.S. Testing, contained mercury in the range of 0.0215% to 19.5% (U.S. Testing 4).

(h) The EPA's analysis of soil samples obtained from U.S. Testing showed a maximum mercury content of 20.0% (DV-609 dated August 8, 1974).

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(i) In August 1974, DEP personnel reviewed the preliminary data and were of the opinion that the Ventron site contained about 766,656 lbs. of mercury (DV-606, DV-385).

36. The August 16, 1974 Agreement.

(a) The Ventron industrial buildings had been confined generally to the eastern portion of the Ventron property.

(b) The nine sites selected by the EPA and the DEP for the U.S. Testing soil study were confined to the eastern portion of the Ventron property.

(c) Wolf intended to construct the larger of the two proposed warehouse buildings on the western side over the old Ventron parking lot.

(d) The most westerly of the nine sites sampled by U.S. Testing, sites 1, 2 and 3, were, according to the data, among the least contaminated with mercury.

(e) Mercury concentrations in the soil sample from sites 1, 2, and 3, as analyzed by U.S. Testing, were as follows:

	Site 1	Site 2	Site 3
Surface	.0415%	.0515	.3215
1 foot	.0215	.0265	.1825
2 foot	.2175	.0315	.1450
3 foot	.0185	.0275	.0930

(f) On August 16, 1974, the following people met at the EPA office in Edison, New Jersey: Longstreet; Faille (DEP); Gluckstern, Librizzi, Polito (EPA); Andrews; Wolf (Wolf) (DV-382).

(g) On August 16, 1974, a Memorandum of Understanding (P-48) was executed by EPA, DEP and Wolf. It provides:

(1) Rovic shall remove six inches of soil from the easterly line of Building No. 2 then running westerly and southerly to the western boundary of the property. This soil will be stock-piled and segregated from construction rubble at a point in the northeast corner of the cross-hatched area indicated on Rovic Plan A1-3574

(2) Samples will be taken to a depth of one foot at points 1A through 4A as indicated on Rovic Plan A1-3574.

(3) Rovic will notify Mr. David Longstreet of the New Jersey Department of Environmental Protection, or his representative, of the results of sample tests, which will be for mercury only.

(4) New Jersey Department of Environmental Protection will coordinate with the Bureau of Solid Waste Management, NJDEP, and designate a proper site for disposal of stock pile material if contaminated. If the material is not contaminated, it need not be removed from the site, at Rovic's option.

(5) In consideration of the above, provided that test borings do not indicate a mercury content exceeding that found in borings taken at Sites 1, 2 and 3, Rovic may proceed with construction provided that such construction is limited to areas west of the easterly line of Building No. 2, as indicated in Rovic Plan A1-3574.

(6) No construction or field work shall be done east of Building No. 2 until additional tests are performed. The results of these tests will be given to EPA and NJDEP.

(7) Prior to removal of contaminated excavated material, Rovic will provide for approval by EPA and NJDEP a plan for removal and disposal. EPA and NJDEP upon receipt of the plan will respond to Rovic within five working days.

(8) Rovic reserves the right to formulate a plan of taking additional test borings to further define the pattern of contamination of the site. The plan must be approvable by Mr. Michael Polito of EPA, or his designee. Results of additional testing will be evaluated by Rovic, EPA, and NJDEP to determine whether any change in excavation or method of disposal of excavated material is warranted. Any additional findings shall be submitted no later than September 30, 1974. EPA and NJDEP will advise Rovic of their requirements within ten days of receipt of Rovic's statement.

(9) Subject to the above, Rovic agrees to remove contaminated soil to a depth of three feet beginning 65 feet east

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of Building No. 2 and extending to the easterly property line across the width of the property as indicated in the cross-hatched area on Rovic Plan A1-3574.

(h) Building No. 2, as referred to in the August 16, 1974 Agreement, is the rectangular building at the top of Rovic plan A1-3574. Building 2 was not to be demolished by Ottilio in demolishing the remainder of the site. It was to remain and did remain as a field office (Wolf Tr., 2/10/77, at pgs. 465-66; D'Amore Tr. I at pgs. 12-13). As of August 16, 1974, it was the only building left standing on site. The reference to building 2 in the August 16, 1974 Agreement is not to the warehouse building No. 2 ultimately erected by Wolf on Lot 10B.

37. Construction of Building 1 (Lot 10A).

(a) Paragraph 5 of the August 16, 1974 Memorandum of Understanding (P-48) provided:

> In consideration of the above, provided that test borings do not indicate a mercury content exceeding that found in borings taken at sites 1, 2, and 3, Rovic may proceed with construction provided that such construction is limited to areas west of the easterly line of Building No. 2 as indicated in Rovic Plan A1-3574.

(b) Building No. 2 as referred to in the Memorandum of Understanding and as shown on Rovic Plan A1-3574 is just east of the proposed building line for the warehouse building to be constructed on the westerly portion of the site (Lot 10A).

(c) On August 21,1974, U.S. Testing collected four additional soil samples from the area west of the easterly line of Building No. 2 (DV-604, dated August 29, 1974).

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(d) By letter dated August 29, 1974, U.S. Testing reported to Rovic that the maximum concentration of mercury among the four samples obtained on August 21, 1974 was 0.005% (DV-482; DV-604; Wolf Tr., 3/10/77, at pgs. 757-760).

(e) By letter dated August 30, 1974, Rovic forwarded to the EPA and the DEP a copy of the U.S. Testing analysis of the four additional samples. In the letter, Rovic advised NJDEP that in view of the U.S. Testing Co. results, and in accordance with paragraph 5 of the August 16, 1974 agreement (P-48), Rovic would proceed with construction of warehouse Building No. 1 (DV-481; DV-603; P-50).

(f) Warehouse Building No. 1 was constructed by Rovic on Lot 10A in accordance with its plans and specifications in the period September 4, 1974 to approximately September 30, 1975 (Wolf Tr. 2/10/77, at p. 490)

(g) In order to construct warehouse building No. 1, the construction rubble was removed along with 6 inches of surface soil and vegetation. The soil was separated from the demolition debris and stockpiled (LePre Tr., at pgs. 44-45; 47; Wolf Tr. 3/10/77, at pgs. 745-457).

(h) The original parking lot was not disturbed (LePre Tr. at pgs. 115-116).

(i) Three foot of fill was brought to the site to raise the ground elevation. (Id. at pgs. 115-116).

(j) The site was excavated for footings. The building was erected on footings in the ordinary manner (LePre Tr. at p. 13).

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(k) The six inches of top soil remained stockpiled on site until late summer of 1975 when it was removed to the Building 2 area on the eastern side of the site (Wolf Tr., 3/18/77, at 760-765; 769-775).

(l) Wolf and USEPA and NJDEP agreed that construction over Lot 10B would be held off until a satisfactory solution to the mercury could be found. (Wolf Tr., 3/10/77, at pgs. 781-782).

38. Preliminary Estimates of the Mercury Problem on the Eastern Portion of the Ventron Site (Lot 10B).

(a) In August 1974, DEP personnel, based on preliminary data, estimated that the Ventron site contained about 766,656 pounds of mercury. (DV-606; DV-385).

(b) In August 1974, the DEP was of the opinion, based on preliminary data, that "the heavy metals could probably be removed from the soils at a profit, or at almost no cost," and that the mercury recovery would be economical (Memorandum from Dalton to Longstreet, no date).

(c) In forming its opinion in August 1974, the DEP relied in part on U.S. Geological Survey Paper 820 and U.S. Bureau of Mines Bulletin 650, indicating mercury is minable at 0.1% (Id.).

(d) In August 1974, the DEP was of the opinion that the size of the mercury impregnated area "should be delinated (sic.) by borings and analysis." (DV-606; DV-222; DV-385).

39. The Jersey Testing Laboratories Soil Study.

(a) Sometime prior to September 6, 1974, Larry LePre, on behalf of Rovic, laid out a grid system over a Ventron site

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plan, Exhibit (LePre Tr. at pgs. 132-133; 137-138). The intersections of the horizontal and vertical lines were assigned alphanumeric designations.

(b) From September 6 through 10, 1974 Jersey Testing Laboratories, Inc. (hereinafter "Jersey Testing") bored and sampled at the site at the locations indicated by the intersections on the grid system laid out by LePre.

(c) Between September 6 and 10, 1974, Jersey Testing sampled 35 sites. From each site, Jersey Testing removed soil samples at the one, two and three foot levels.

(d) Jersey Testing analyzed approximately 100 soil samples for the presence of mercury.

(e) Jersey Testing prepared and submitted its report dated October 1, 1974 setting forth its findings of the mercury concentrations at the locations sampled (Jersey Testing - 2).

(f) The Jersey Testing report notes mercury concentrations as high as 14.25% at a depth of two to three feet (Id.).

(g) Based on the Jersey Testing report, other experts concluded there were 200,000 lbs of mercury at lot 10B (Hazen Report dated April 4, 1975).

40. August 1974 to September 1975: Investigation of Means and Methods to Reclaim, Recover or Remove Mercury from the Soil.

40.1 Initial Review.

(a) Rovic's initial review of the U.S. Testing data in August 1974 led Andrews (Rovic) to conclude only loca-

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tions 8 and 9 (the most heavily contaminated) "would be minable." (Andrews Memorandum dated August 13, 1974).

(b) On August 13, 1974, Andrews reported to Wolf that "elsewhere throughout the site, it would be impractical financially for us to pay to cover the cost of excavating and processing the fill to recover the mercury." (Id.)

(c) On August 15, 1974, Andrews reported to Wolf that Magier, former chief chemist for Ventron, told Joseph D'Amore, that "unless there is a 50% or better content of mercury, it would not be profitable to mine."

40.2 Merck Chemical Division.

(a) In early August 1974 Wolf's employee, Bernard Scharf, asked Merck Chemical Division (hereinafter, "Merck") about a mercury recovery project (Memorandum dated August 8, 1974).

(b) Merck was not interested in the project (Id.).

40.3 Phillip Bros. Division of Englehardt Industries.

(a) On September 6, 1974, Andrews wrote to Phillip Bros. Division of Englehardt Minerals and Chemicals and transmitted a copy of the U.S. Testing report for review and a meeting was scheduled.

(b) Phillip Bros. performed tests at the site in or about August/September 1974 (EPA memorandum dated September 19, 1974).

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(c) By letter dated October 3, 1974, Rovic sent Phillip Bros. a copy of the Jersey Testing report of October 1, 1974.

(d) After further meetings and consultations, Phillip Bros. advised Wolf that it was not prepared to recover the mercury from the site.

40.4 Gaess Environmental Services.

(a). By letter dated August 13, 1974, Gaess Environmental Services expressed interest in a reclamation project for mercury on the site. Gaess requested additional information.

(b) By letter dated August 22, 1974, Rovic sent Gaess a copy of the U.S. Testing report.

(c) After further review and discussion, Gaess was not interested in the project.

40.5 Efraty.

(a) By letter dated October 19, 1974, Wolf contacted Professor Efraty of Rutgers University concerning mercury reclamation.

(b) Professor Efraty was not interested in the project.

40.6 Ventron.

(a) By letter dated September 18, 1974, Robert C. Petersen of Ventron sent Rovic a copy of an EPA document describing methods of tying up or "gettering" mercury in soil.

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(b) Ventron expressed no interest in solving the mercury problem on site.

(c) Ventron recommended Metcalf & Eddy and Lucius Pitkin to Rovic as experts to help in the mercury problem.

40.7 Ollis/Johnson

(a) By letter dated October 14, 1974, Wolf contacted Dr. David Ollis, Department of Chemistry, Princeton University, confirming a meeting at which they had discussed the "abnormal mercury deposit" on the property. Wolf enclosed the U.S. Testing and Jersey Testing reports.

(b) On October 29, 1974, Wolf met with Dr. Ollis and his associate Professor Johnson, also of Princeton (Letter dated October 22, 1974 from Ollis to Wolf).

(c) By letter dated November 6, 1974, Drs. Johnson and Ollis reported to Rovic its "preliminary conclusions" that the "levels were appropriate to direct recovery of the mercury by retorting, i.e., batch heating in closed systems to distill off the mercury." In addition, they preliminarily concluded that the idea of capping off the contaminated region and sealing its boundaries with appropriate material should be reviewed with the EPA.

(d) On December 5, 1974 Robert Wolf, in the company of Dr. Johnson, met with Michael Polito and Henry Gluckstern (EPA) and David Longstreet (DEP) (DV-405; DV-406).

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(e) At the meeting of December 5, 1974, Dr. Johnson outlined his plans for treatment of mercury contamination at the Ventron site (DV-404, dated December 6, 1974).

(f) At the meeting of December 5, 1974, the EPA requested a written proposal from Rovic "spelling out details of excavation, storage and subsequent processing of highly contaminated earth with timetables and supportive data."

(g) At the meeting of December 5, 1974, Rovic informed the DEP that Gaess Environmental Services (Chem-Trol) was too far away for processing the mercuric wastes with sulfuric acid and dumping in the Buffalo area.

(h) By letter dated December 9, 1974, Rovic submitted to DEP the procedures to be followed by Drs. Johnson and Ollis and requested authorization to proceed with the development of building No. 2 on lot 10B (Letter dated December 9, 1974).

(i) In its proposal of December 9, 1974, Rovic stated that it would excavate the material from the site where analysis indicated a mercury content greater than 1%. The removed material would be stockpiled on the job site and covered with a polyethlene vapor barrier held securely in place to prevent contaminated material from being washed into the building area. Thereafter, following the recommendations of Drs. Johnson and Ollis, the soil would have its mercury content reduced using a method which Drs. Johnson and Ollis had found worked on the basis of bench top experiments of an air flotation process.

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(j) On December 20, 1974, Polito (EPA) discussed with Rovic personnel the proposal of December 9, 1974.

(k) By letter dated December 24, 1974, (P-51) David Longstreet of NJDEP informed Rovic that its proposal of December 9, 1974 had been rejected. In particular, DEP stated:

> "if the soil is to be treated at the site to remove mercury, the soil cannot be stockpiled to permit construction.
>
> "2. The soil in the area in question should be removed or treated on the entire site, not just in the areas indicated on your plan. The depth of soil that must be removed and treated depends on additional sampling results.
>
> "3. Provisions must be made to contain all water used in the processing. This water must be treated to remove all mercury and mercury compounds." (See also DV-591).

(l) By letter dated December 30, 1974, Dr. Ollis informed Andrews (Rovic) that a series of bench scale experiments to determine the appropriate parameters for the air flotation mercury recovery scheme had "failed." Dr. Ollis reported that in a subsequent series of experiments, a "simple gravity separation scheme appeared to be quite effective."

(m) As of December 30, 1974, Drs. Johnson and Ollis were working on a plan for on-site separation and recovery of mercury by gravity separation.

(n) By letter dated January 9, 1975, Drs. Johnson and Ollis concluded that after discussions with Philip Bros. and

its studies of Ventron's earth samples, a relatively simple mechanical separation process appeared feasible to recover virtually all of the mercury present in the earth as metal: "It is our belief that most of the mercury is in metallic form and analyses of samples are now being undertaken for quantitative confirmation." Drs. Johnson and Ollis estimated that it would take ten months to reduce the mercury content of the earth "to levels acceptable for ultimate disposal." Because of this time, they advised that contaminated earth would have to be removed and stored safely for processing if construction were to go forward.

(o) In their letter of January 9, 1975, Drs. Johnson and Ollis stated that the only practical alternative (to mechanical separation) was to seal off the contaminated area by enclosing it with water proof dikes and capping the top. Such efforts would "effectively preclude any significant release of mercury in any form to the surrounding area."

(p) On January 10, 1975, Dr. Johnson attended a meeting among representatives of EPA, DEP and Wolf in New York City to discuss the alternatives of on-site gravity separation and possibilities for containment on site (DV-455; DV-586).

(q) On January 14, 1975, additional soil samples were delivered to Professor Ollis (Letter dated January 14, 1975).

(r) On January 29, 1975, Dr. Ollis reported his experimental findings to Rovic. On the basis of experiments with air flotation and gravity sedimentation he concluded that: "It

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does not appear feasible to recover the metal values of mercury as metal for soils assaying less than 3% mercury."

(s) On January 29, 1975, Drs. Ollis and Johnson reported the only two alternatives where entombment by sealing off the site with dikes or digging out the mercury deposits and processing on adjacent property by other means, but, the letter concluded, the mercury complexes at the Ventron site were "irrecoverable by known techniques."

(t) On March 4, 1975, Drs. Johnson and Ollis submitted their final report "assessing several possible treatment schemes for the mercury contaminated land." The two major conclusions of the report were: "the bulk of the mercury is irrecoverably by the simple process schemes that we studied experimentally, and the entombing of the contaminated volume should, according to our calculations, reduce the mercury concentration in the horizontal effluent to Berry's Creek to approximate proposed legal limits."

40.8 Hazen Research, Inc.

(a) Sometime during the week of February 21, 1975, Wolf met with representatives of Hazen Research, Inc. to discuss the mercury contaminated soil.

(b) By letter of February 28, 1975, Hazen suggested that it examine some representative samples to determine the mode of occurrence of the mercury and to indicate the optimum recovery method.

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(c) On March 25, 1975, Wolf entered into a professional services agreement (dated March 7, 1975) for the initial phase of a program for the study of the recovery of mercury from the soil at the site (Cover letter dated March 7, 1975).

(d) In March 1975, Hazen gathered some samples of soil for analysis (Letter of March 25, 1975).

(e) On April 4, 1975, Hazen forwarded to Wolf its "Recovery of Mercury from Soil, Progress Report No. 1." (hereinafter, the "Hazen Report").

(f) The Hazen report concluded:

> Almost complete elimination and possible recovery of the mercury could be obtained by retorting which is the standard method for treating mercury ores.
>
> Preliminary calculations indicate that the site contains at least 3,875 tons of soil averaging over 2.5% mercury or some 200,000 lbs of mercury. At current market prices this mercury would be worth over $700,000. It is suggested that the work be undertaken to locate a commercial mercury retorting operation which would process this material on a toll basis. If this can be done then arrangements should be made to remove the soil, transport it to the processing plant, probably by rail, and sell the recovered mercury to defray the removal, transport, and processing costs.

40.9 Jerry Rudy.

(a) By letter dated February 4, 1975, Rovic forwarded to Jerry Rudy copies of relevant laboratory reports and data concerning the mercury contamination problem at Wood Ridge.

(b) Rudy was not interested in the project.

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40.10 Fluid Separation Design, Inc.

(a) On February 13, 1975, Rovic met with representatives of Fluid Separation Design, Inc. at the project site, and again at the Wolf offices on February 18, 1975.

(b) By letter dated February 20, 1975, Fluid Separation Design, Inc. proposed to recover the mercury economically and attached to the letter a preliminary economic analysis.

(c) The Fluid Separation Design preliminary analysis indicated approximately 36,000 pounds of recoverable mercury from the high concentration areas of the Ventron site E-5, F-5 and G-5.

(d) By letter dated February 21, 1975, Andrews (Rovic) advised Fluid Separation Design, Inc. that if it still was interested in recovery of mercury, Rovic would be happy to have further conferences.

(e) Fluid Separation Design, Inc. expressed no further interest in the project.

40.11 Clorox.

(a) Sometime prior to April 17, 1975, Wolf contacted Larry Gillengerten of Clorex Company.

(b) By letter dated April 17, 1975, Wolf sent Gillengerten reports, including the U.S. Testing, Jersey Testing and Hazen reports.

(c) By letter dated April 25, 1975, Gillengerten reported to Wolf that the chemical deposits on the site were "most interesting." Gillengerten advised that on-site retorting

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was possible only if people paid "no attention to EPA requirements for emissions." Gillengerten advised Wolf of other potential experts, including a company known as Quick Silver Products, Inc. and a local "wizard" named Mike Fopp who specializes in mercury mining and reduction. Gillengerten advised that it was doubtful that the EPA would allow rail transportation of mercury because "the mercury would be spilled and cause some pollution in the eyes of the EPA."

(d) Clorox expressed no further interest in the project for itself.

40.12 Michael Fopp.

(a) Sometime prior to April 25, 1975, Wolf had a lengthy conversation with Michael Fopp of Gordon I. Gould & Company of San Francisco, California.

(b) Further telephone conversations between Wolf and Fopp occurred on May 2, 1975.

(c) By letter dated May 5, 1975, Fopp reported to Wolf of his study of the problem and named some mining companies which might be willing to process the materials for a charge on a per ton basis provided the material were hauled from the site to the mine. This shipment would require rail movement of the mercury laden soil from New Jersey to Nevada or California.

(d) The EPA rejected any plan which would require removal of the soil from the site by rail unless accompanied by guarantees that no mercury would leak from the tank cars (LePre Tr. at pgs. 39-40).

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40.13 Simmons Refining Co.

(a) By letter dated April 18, 1975, Andrews, on behalf of Rovic wrote Simmons Refining Company and enclosed the Hazen, U.S. Testing and Jersey Testing reports.

(b) Simmons was not interested in the project.

40.14 Chicopee Manufacturing Co.

(a) By letter dated April 21 1975, Wolf wrote to Chicopee Manufacturing Co. enclosing the U.S. Testing, Jersey Testing and Hazen reports.

(b) Chicopee was not interested in undertaking the project.

40.15 Mercury Refining Co.

(a) By agreement dated May 5, 1975, Mercury Refining Co. agreed with Wolf to test, refine and distill at its own cost and expense approximately one ton of mercury impregnated material.

(b) Six or seven 55 gallon drums of material were sent to Albany, New York by Wolf for test processing (Wolf Tr. 3/10/77 at pgs. 766-792).

(c) Mercury Refining Co. was not interested in the project and advised that the material was not economically recoverable.

40.16 Arco.

(a) Sometime prior to June 1975, Michael Polito of EPA asked Andrews (Rovic) to contact William Jud of Atlantic Rich-

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field Company (Arco) concerning mercury recovery (DV-40, dated June 3, 1975).

(b) By letters dated June 5, 1975 and June 2, 1975 Arco advised the DEP and the EPA, respectively, that Arco had decided not to pursue the "mercury resalvage project", stating that "it's fairly small to be of interest to A. R. Co., and the construction company wants far too much money for the recovered mercury." (DV-575; DV-439; DV-574)

(c) By letter dated June 20, 1975, Polito forwarded to Rovic Arco's letter of June 2, 1975.

(d) On June 23, 1975, Polito reported to Gluckstern (EPA) that he would attempt to bring Arco and Rovic together (DV-437).

(e) Sometime shortly prior to June 25, 1975, Wolf did meet with H.E. Bond, vice-Ppesident of Arco.

(f) By letter of June 25, 1975, Wolf set forth the mercury problem and concluded:

> We are most interested in proceeding with our construction program and entering into an equitable program relevant to the recovery of this mercury, I would greatly appreciate your personal and prompt attention to our request.

(g) By letter dated July 3, 1975, Arco advised Rovic that

> After reviewing all the facts available to us, we have decided not to pursue this potential venture further at this time. However, we sincerely appreciate the opportunity to consider the

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venture and your cooperation in providing us data.

(i) By letter dated July 8,1975 Polito of USEPA requested Arco to send it any cost estimates it had prepared in connection with the Rovic proposal (DV-435).

(j) On July 8, 1975, Polito reported to his supervise that Arco had backed down from the proposal for treatment. (Memorandum dated July 8, 1975; DV-436).

(k) On July 8, 1975, Wolf requested of Polito additional names of firms that could do retorting.

(l) By letter dated July 25, 1975, Arco advised the EPA that the company "has no interest for participation in any project or lands of the Rovic Construction Company." Arco advised USEPA that "since we are not in that rather specialized business and do not have the required expertise, we did not consider the matter further." (DV-423).

40.17 Placer Development Co.

(a) By letter dated July 9, 1975, Wolf wrote Placer Development Co. Ltd. of Vancouver, British Columbia including information and inquiring of mercury recovery.

(b) By letter dated July 15, 1975, Placer Development, Ltd. advised Wolf that it estimated 3,875 tons of soil averaging 2.5% mercury for a total of about 200,000 lbs. of mercury on site, mainly as metallic mercury oxide.

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(c) Placer Development, Ltd. advised Wolf that it doubted that it would be economical to feed furnaces it had available to it with "feed containing only 2.5% mercury." There was also a problem of physically handling and introducing 4,000 tons of outside material into the furnace; pieces larger than fine would require crushing or screening. Placer further advised that "it is not possible to add your material at the head of the ore treatment process because metallic mercury and oxide mercury would not be recovered by the floatation process." Placer further advised that "you have estimated rail freight to Nevada of $125,000. The nearest rail siting would be at Winnemucca, requiring unloading and trucking a further 80 miles."

(d) By letter dated July 28 1975, Placer Amex, Inc., an affiliate of Placer Development, Ltd., confirmed the problems with respect to the type of material from the Wolf site. Placer advised:

> Accordingly, after serious consideration, we must advise that we are unable to accommodate you in this matter.

40.18 International Recycling Corporation.

(a) Sometime prior to June 1975, Wolf had commenced conversations with representatives of IRC Resources Corporation (hereinafter, "IRC") of Sayreville, New Jersey.

(b) By proposed agreement dated June 2, 1975, IRC offered to move up to three cars of mercury dirt from the Wolf site to test for refining of mercury.

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(c) On June 6, 1975, Andrews (Rovic) met with Hogan of IRC (Memorandum dated June 5, 1975).

(d) At the meeting of June 6, 1975, it was agreed that material would be shipped to Nevada in the middle of June and the results would be obtained by June 30, 1975. If the results proved satisfactory, the material would be stockpiled by July 31, 1975 and removal from the site commenced (Handwritten notes bearing the date June 6, 1975).

(e) By letter dated July 8, 1975, Wolf forwarded to Hogan an original and copy of an agreement between Wolf and IRC relative to the mercury recovery.

(f) By Agreement dated July 25, 1975 Wolf and IRC agreed on a program for testing and then removal and refining of mercury from the site.

(g) The agreement with IRC required stockpiling material of three grades, depending on mercury content. Work was scheduled to commence the beginning of August 1975 on the stockpiling. Wolf was to arrange for placement of the material on gondola cars of the Erie Lackawanna Railway for transportation to Nevada. Transportation charges in excess of $35 per ton would be paid by Wolf.

(h) On Monday August 4, 1975, IRC commenced stockpiling the material on site into three areas, that with over 5% mercury, that between 3 and 5% mercury, and that between 1-1/2 and 3% mercury.

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(i) By letter dated August 4, 1975, IRC confirmed that it would like to "sample the stockpile" to make certain that what is shipped is "economical material."

(j) On August 5, 1975, Wolf advised the DEP and the EPA by telephone of its plans to remove the contaminated soil from the property pursuant to the IRC agreement (Polito memorandum dated August 11, 1975).

(k) By letter dated August 14, 1975, IRC wrote to Wolf complaining of DEP and EPA precipitated delays in shipping material to Nevada. IRC advised that "delivery must commence before Friday August 22 in order to meet other pressing customer orders or shippers." IRC offered to attend any meetings with the EPA which might be helpful.

(l) Sometime shortly prior to August 25, 1975, IRC received the results of its most recent sampling program.

(m) By letter dated August 25, 1975, Wolf confirmed to IRC that on the basis of recent samplings it "is no longer economically feasible for you (IRC) to remove this mercury from our property. With this understanding and more particularly pursuant to our agreement of July 25, 1975", the agreement was terminated as between IRC and Wolf.

40.19 EPA Efforts.

(a) In February 1975 Gluckstern (EPA) wrote to the following firms concerning any interest they might have in undertaking a solution to the mercury problem at the Ventron site:

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1. El Paso (DV-445).

2. Consolidated Minerals, Ltd. (DV-447).

3. New Indira Mining (DV-446).

4. Bonanza Oil and Mineral Company (DV-448).

(b) None of these companies, so far as the records indicate, expressed any interest in the problem.

41. The Entombment Plan.

(a) As early as November 6, 1974, Dr. Johnson of Princeton recommended to Andrews that:

> "the idea of capping off the contaminated region and sealing its boundaries with appropriate material should be reviewed with EPA. Simple leaching tests with water on representative samples of the earth might show that the amount of soluble mercury is such that no contamination of local aquifers or waterways could come from your site." (Letter dated November 6, 1974).

(b) By letter of December 24, 1974 (P-51), DEP rejected the Wolf proposal of December 9, 1974 to stockpile and recover mercury on sight by a method suggested by Drs. Johns and Ollis. (DV-591).

(c) On December 30, 1974, Andrews (Rovic) called Scheil (Ward) and told him Rovic needs a procedure to prevent mercury contamination of Berry's Creek for submission to EPA by January 9, 1975 (Scheil Tr., 9/19/77, at p.29).

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(d) On December 31, 1974, Andrews (Rovic) met with Scheil (Ward) to discuss a plan of entombment to present to the DEP and the EPA (Scheil Tr., 9/17/77, at pgs. 30-31; Scheil memoradum dated 12/30/74).

(e) On December 30, 1974, Scheil (Ward) suggested to Rovic that since the building area encompasses the major portion of the site (10B), exterior continuous footings could be used as a cut-off to prevent infiltration. He also suggested that the concrete should be poured "neat with water stops between any separate pours." It was also considered that if mercury continued to leach from the site after the exterior footings, a further cutoff wall might be necessary. After discussing the matter John Andrews requested a letter from Joseph S. Ward spelling out the recommendations (Scheil memorandum dated December 31, 1974).

(f) By letter dated January 2, 1975, Ward presented to Rovic a written plan to entomb the mercury (P-54; DV-589; (Scheil Tr., 9/19/77, at pgs. 35-36) (hereinafter, the "Ward I" Report).

(g) The Ward I Report is based on the data contained in the Jersey Testing Report of October 1, 1974, showing mercury up to 14% on the eastern sector of site. The Ward I Report notes that on the site there is "natural one-half to one foot thick layer of thick organic silt and peat which is essentially impervious." Ward proposed:

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"to contain the contaminated fill materials that no flow of water occurs into or out of it. Since the fill is underlain by an impervious organic soil layer, containment will only be required around the perimeter of the area. In light of the fact that the proposed structure is about 25,000 feet sq. and encompasses most of the problem fill, we recommend that the exterior concrete footings be designed as a cutoff wall as follows:

1. exterior footing should be a continuous footing founded in the sand directly below the organic layer.

2. in order to preserve the impervious nature of the organic layer, the footing should be poured neat, without forms, in contact with the organic soil. The concrete wall on the footing may be formed.

3. since the exterior footing would not be able to be poured monolithically, keyed joints with water stops should be used between pours."

(h) The Ward I Report further states that "if significant contamination is recorded [after the exterior footings] it would be necessary to surround the entire site with cutoff wall at the property line. This wall, as previously discussed, consists of concrete."

(i) The Ward I Report concluded that "if the recommended procedures are followed, it is our opinion that an effective seal can be created, thereby preventing contamination of the waterways."

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(j) On January 10, 1975, representatives of Wolf (including Tom Scheil of Ward) met with representatives of the DEP and the EPA to discuss the Ward I alternative, as well as to continue discussion of off-site recovery. (see paragraph 40.7(p) supra) (Scheil Tr., 9/19/77, at pgs. 45-46).

(k) Wolf advised the DEP and the EPA that the cost of retorting and shipping off-site was prohibitive. The EPA advised it would not permit on-site retorting (Wolf Tr. 3/10/77, at pgs. 783-786).

(l) Scheil elaborated at the meeting on his entombment proposal and the construction techniques to be employed (Scheil Tr., 9/19/77, at pgs. 45-46; Scheil notes dated January 10, 1975, DV-546).

(m) At the meeting of January 10, 1975, the EPA requested and Wolf agreed to have Jersey Testing perform five additional shallow borings to test the impervious nature of the organic clay layer (Scheil Tr., 9/19/77, at p. 46). The EPA was advised by Tom Scheil that there were risks in the sampling process but EPA wanted the test taken anyway (Scheil notes dated January 10, 1975).

(n) On January 13, 1975, Scheil prepared a shallow boring program to obtain samples of sand below the organic silt layer for testing for mercury contamination (Notes dated January 13, 1975).

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(o) By memorandum dated January 23, 1975, Longstreet reported to his superior Carl Birns that the silt layer at the site "is apparently impervious." He concluded his report of the meeting with Ward as follows:

> "this plan seems to be the best available to protect the environment at this time if the additional technical information requested is satisfactory. Actually, the soil should be removed and treated. The cost of this method would be very high even if the technology would be available to reclaim the heavy metals." (Memo dated January 23, 1975, DV-364)

(p) On January 13, 1975, Jersey Testing obtained the additional shallow boring samples. The samples, when tested, showed mercury from the five samples as follows:

	Depth	Mercury in %
a.	7-1/2 feet	0.0013
b.	5 feet	0.0002
c.	6 feet	0.00055
d.	6 feet	0.0025
e.	6 feet	0.0015

A water sample was also taken of the ground water and it showed .003 parts per million mercury. (Jersey Testing Laboratories Report dated January 28, 1975, P-43; DV-450).

(q) By letter report dated January 29, 1975 Ward submitted to Rovic its revised report (hereinafter the "Ward Report II") (DV-306; P-49; Scheil Tr., 9/19/77, at P-48).

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(r) After discussing the information that the "impervious clay" extends over one hundred feet beneath the surface and is "essentially impervious," the Ward II Report recommended four alternative programs or stages to eleviate the mercury pollution problem at the site:

> "Alternate one - continuous building perimeter footing plus complete impervious paving of the remaining area.
>
> Alternate two - alternate one above, plus shallow cutoff walls around portions of the southern, eastern and western property lines.
>
> Alternate three - Alternates one and two above, plus completion of the shallow cutoff wall along the entire eastern and southern property lines.
>
> Alternate four - alternate one above, plus a deep cutoff wall along the entire eastern and southern property lines."

(s) The Ward II Report details the construction methods to accomplish the foregoing procedures (P-49).

(t) By letter dated January 30, 1975, Rovic forwarded the Ward II Report to the EPA and the DEP together with the Jersey Testing shallow borings test results of January 28, 1975 (DV-519).

(u) The EPA and the DEP discussed a response to the Ward II Report.

(v) By letter dated February 28, 1975, Meyer Skolnick on behalf of EPA formally responded to Rovic (hereinafter, the "Skolnick" letter). The EPA's proposal was essenti-

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ally the same as the recommendations of the Ward II Report. The EPA concluded, "After you have had time to consider and comment upon our proposal in writing to both the EPA and NJDEP, the final version will be written as a stipulation and final disposition for signature by the Regional Administrator, Region II, EPA, and the Commissioner, New Jersey Department of Environmental Protection, along with Rovic Construction and Wolf Enterprises." (P-52)

(w) The Skolnick letter adopted a concept of a continuous building perimeter footing, a wall around the perimeter of the southern and eastern property lines as set forth in alternative three of the Ward II Report, complete impervious paving of the surface of the construction site, and all drainage by water impervious ditches (P-52).

(x) The Skolnick letter also required a monitoring program, semi-annual inspection of all above ground structures, a file maintained on the property available for inspection by EPA and NJDEP, an obligation to repair all cracks in paving and drainage within 14 days of detection, and a requirement that the conditions of the final stipulation appear in deeds executed in transferrance of ownership or proprietorship of the property, with the stipulation becoming a covenant running with the land (P-52).

(y) The Skolnick letter required that if any later surveys or studies determined that the abatement actions were not sufficient to satisfy any EPA requirements, or NJDEP re-

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quirements, it would be required that Rovic agree to "comply with any additional requirements which may be imposed." (P-52)

(z) Following February 28, 1975, there were discussions between Wolf and Henry Gluckstern of USEPA concerning some slight modifications to the terms of the February 28, 1975 agreement. Wolf objected to the monitoring requirements, any requirement that the stipulation be a covenant running with the land, and the open-ended commitment to do anything necessary to comply with any additional requirements.

(aa) After February 28, 1975, Wolf continued his efforts to find an on-site or off-site disposition of the contamination (paragraph 40 supra.)

(bb) By agreement dated July 25, 1975, Wolf entered into a contract with International Recycling Company to provide for the shipment of the excavated contaminated fill to Nevada by rail car for recovery there.

(cc) The IRC/Wolf agreement of July 25, 1975 required stock piling of the contaminated fill into three piles based on mercury content. On August 4, 1975 IRC commenced stockpiling in accordance with the agreement (paragraph 40.18 supra; IRC letter dated August 4, 1975).

(dd) On August 5, 1975, Lloyd Ganon of Rovic telephoned the DEP to inform it of the IRC removal plans. The DEP immediately protested that it was not in accordance with an al-

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leged agreement arrived at on January 10, 1975 and because the Skolnick letter was still unanswered (P-53).

(ee) By telegram on August 8, 1975, the DEP ordered Rovic to cease all removal and stockpiling. It ordered Rovic to "completely cover and seal all removed and stockpiled material to prevent any waters from contacting said material. You are hereby further ordered to cover and seal any and all excavated areas to prevent any waters from contacting said excavated areas." (DV-423)

(ff) By letter dated August 11, 1975, Rovic advised the DEP of details of the IRC plans in writing and stated that "during the stockpiling operation, the piles would be protected from the weather by means of polyethylene covers. The stockpiled material would be on the site approximately one month."

(gg) On August 11, 1975, Polito (EPA) visited the Ventron site to inspect the stockpiling (Memorandum dated August 12, 1975). By internal memorandum, Polito concluded that EPA did not have authority to prevent the scraping.

(hh) On August 13, 1975, the EPA determined that the IRC proposal was not technically acceptable and Polito raised the concern that in stockpiling the impervious layer may have been penetrated (Memorandum dated August 13, 1975; DV-567).

(ii) On August 22, 1975, the EPA and the DEP met with representatives of Rovic to discuss the question of the de-

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struction of the impervious layer by sampling and digging on site and the status of the Skolnick letter of February 28, 1975.

(jj) Attending the meeting on behalf of the DEP were Longstreet, Frank Coolick, and Morton Goldfein, then head of the Attorney General section of the DEP.

(kk) At the meeting of August 22, 1975, Wolf advised the DEP and the EPA that the IRC agreement and plan to ship to Nevada was no longer viable as a result of recent samplings (DV-664, memorandum dated August 25, 1975; Wolf Tr. 3/10/77, at pgs. 801-805).

(ll) The EPA formally advised Wolf that "the federal government has no legal basis to prevent him from building. The only instance where it would have jurisdiction is if the mercury pollution were declared a public health emergency." (Polito memorandum dated August 24, 1975).

(mm) On August 22, 1977 discussion proceeded on the entombment proposal. Wolf advised that the time from February 28, 1975 had been spent unsuccessfully attempting to locate a mercury reprocessing company in the US.

(nn) It was determined that Ward, Wolf's engineering consultant, should be contacted as to whether the impervious layer was still impervious and as to what the best entombment procedure would be if it were.

(oo) At the meeting of August 25, 1975, the EPA stated that "it would remove the soil necessary to attain a con-

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centration of mercury recommended by EPA's chemists and that EPA would sue Ventron for the cost involved (DV-664)."

(pp) A meeting was then set up for September 3, 1975 with Ward to discuss the entombment proposals and the possibility that the impervious layer had been permeated.

(qq) On August 25, 1975, Wolf discussed with Scheil (Ward) the problem of the impervious barrier (Scheil notes dated August 28, 1975)

(rr) On September 3, 1975, there was an on-site meeting among Longstreet and Richard Dalton (DEP), Thomas Schiel (Ward) and Lloyd Ganon (Rovic), Wolf and Polito (EPA) (DV-663; (Schiel memorandum dated September 3, 1975).

(ss) At the meeting of September 3, 1975, the parties present inspected the area of mercury contamination, the pits in the mercury contaminated area filled with water, and the organic clay barrier. On the basis of the elevations observed and measured by Scheil, he expressed the opinion that the impervious clay barrier had not been penetrated (Scheil Tr. 9/19/77, at pgs. 58-59).

(tt) The September 3, 1975 meeting concluded "after much discussion" and EPA tentatively approved building with continuous wall footings, paved areas, a cut off wall on the eastern and part of the southern property line. (Scheil Tr., 9/19/77, at p. 60)

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(uu) At the meeting of September 3, 1975, the parties reached the understanding that Wolf would proceed with construction as set forth in the Skolnick letter as modified by subsequent discussions (Wolf Tr. 3/4/77, at pgs. 704-715). Wolf advised that the area south of the building was a rail line which could not be paved. At the meeting, Wolf acknowledged that he would proceed with construction in accordance with these plans, and that there would be further discussions concerning a formal stipulation if one were possible.

(vv) By memorandum dated September 3, 1975, Polito confirmed to the director of the EPA that Rovic had "basically accepted the proposals of Meyer Skolnick." (DV-415).

(ww) At the meeting, Wolf also agreed to pump two holes on the site dry, dispose of the water in a proper manner, install a concrete rat slab and cover with clean fill, place the contaminated stockpile adjacent to the rail siding within the building confines surrounded by an earthen dike, install curbs, streets and storm drainage forthwith. The DEP agreed to provide details of monitoring pipes to be installed inside and outside the cut off walls (Letter dated September 4, 1975; never sent).

42. Building 2 is Constructed with Entombment Structures, Monitoring Wells, and Paving.

(a) In July-August 1975, initial site grading and preparation work was done for Warehouse Building 2 on Lot 10B (DV-17;

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Daily Logs, July 23, 25; August 6, 7, 8, 1975) (Scheil Tr., 9/19/77, at pgs. 52-53).

(b) From September 8 to September 16, 1975, Rovic completed site preparation, excavation, and fill for Building 2 (DV-17; Daily Logs, September 8, 9, 10, 11, 12, 15, 16, 1975).

(c) Fill from the Building 1 area was moved to the Building 2 area (D'Amore Tr., 4/27/77, at p. 104).

(d) On September 17 and 18, 1975, Rovic cleaned out the flume and riser ditch (DV-17; Daily Logs, September 17, 18, 1975).

(e) On September 24, 1975, Ward advised Rovic to pour the concrete footings nine inches thick to insure waterproofness. (Scheil Tr., 9/19/77, at pgs. 60-61; Scheil notes dated September 24, 1975).

(f) From September 29, 1975 to November 30, 1976, Building 2 was constructed with a continuous building perimeter, the exterior footings of which formed a continuous footing founded in the gray sand directly below the organic layer of the soil and above the impervious layer (Scheil Tr., 9/19/77, at p. 49; D'Amore Tr. 4/27/77, at p. 78).

(g) The footings for Building 2 were placed in contact with the organic soil to effect a seal between the concrete and the soil (Scheil Tr., 9/19/77, at p. 53).

(h) The concrete wall of the foundation of Building 2 was formed. Key joints with water stops were used between pores and between the footing and the foundation wall of Building 2.

(i) A shallow cut-off wall was constructed around the perimeter of the southern and eastern property lines of Building 2. The walls of the shallow cut-off walls were constructed to a depth of approximately 3-1/2 feet.

(j) The entire site of Lot 10B, with the exception of a portion on which the railroad siding is located was paved with an impervious asphaltic pavement (Wolf Tr., 3/4/77, at pgs. 701-703).

(k) A storm water flume between Buildings 1 and 2 was constructed and paved with water impervious paving to carry water from the northerly to the southerly direction to the drainage ditch on the southerly side of the property (Wolf Tr., 2/10/77, at 473-498).

(l) Drainage from the property along the southern boundary was replaced with underground concrete piping (D'Amore Tr. 4/27/77, at pgs. 113-114; Wolf Tr., 8/24/77 at pgs. 944-946); Wolf Tr. 3/4/77, at pgs. 701-703).

(m) During construction of Building 2, "rat slabs" were installed for purposes of holding waters pumped from the foundation trenches (Wolf Tr., 2/10/77, at pgs. 492-493).

(n) By letter dated January 9, 1976, Rovic advised the DEP of the name of liquid waste remover it had hired to remove the contaminated pumped waters from the site. On the same date, Rovic issued a purchase order for the removal.

(o) Waters pumped into the rat slab during construction of Building 2 were stored in a tank on site and removed from

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the site by tank truck and disposed of by environmental services (Wolf Tr., 3/4/77, at p. 701; Wolf Tr. 2/10/77, at pgs. 493-498).

(p) At the September 3, 1975 meeting, the EPA had expressed concern over existing holes on site where water could pond (Scheil Tr., 9/19/77, at p. 59). The existing hole on Lot 10B was capped with concrete and filled with clean fill.

(q) There were problems in pouring the footings because the trench collapsed as a result of tidal action (Wolf Tr., 7/4/77, at pgs. 698-700). Because of difficulties in pouring the footings neat, on October 21, 1975, Scheil (Ward) met on site and recommended a procedure for pouring with back fill to provide watertight footings. Scheil met with Wolf on the property site on November 13, 1975. Any deviations from the original proposal were corrected in the field (Scheil Tr., 4/14/77, at pgs. 116-117). By letter dated November 17, 1975, Ward confirmed the modified procedures would work (P-55).

(r) By letter dated January 23, 1976, Rovic requested permission of the DEP to have Hackensack Water Company put in the water service line (DV-555). By letter dated February 24, 1976, the DEP gave such permission (DV-554).

(s) On March 22, 1976, DEP visited the site to examine the foundation footings and to choose locations for the monitoring wells (Memorandum April 6, 1976; dated DV-550).

(t) By letter dated April 2, 1976, Rovic confirmed with the DEP an on-site meeting for April 9, 1976 to site the moni-

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toring wells. By letter dated April 12, 1976, Rovic confirmed to the DEP the location and installation of the monitoring wells (DV-549; DV-552).

(u) In or about April 1976, three monitoring wells were installed on the site, one in the interior of Euilding 2 and two on the exterior. These wells were designated respectively as the interior well and well east and well south. Well east is located near the eastern property boundary of Lot 10B just outside the shallow cut-off wall. Well south is located on the southerly side of Lot 10B just outside the cut-off wall.

(v) The entire site was eventually paved (Wolf Tr., 8/24/77, at pgs. 236-242). Lot 10A was paved in December 1975; Lot 10B, with the exception of the eastern edge, was paved November 1976. The balance of 10B was paved in 1977.

43. Final Negotiations and Commencement of Litigation.

(a) At the on-site meeting of September 3, 1975, the DEP, the EPA and Wolf agreed they would attempt to enter into a formal agreement concerning the entombment measures taken and resolving other aspects of the pollution problem.

(b) By letter dated September 17, 1975, the DEP forwarded to the EPA its draft of a proposed agreement with Wolf. (DV-560). The DEP acknowledged that Wolf had objected to any deed stipulation (DV-4014a, b).

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(c) In September 1975, Wolf retained the law firm of Lowenstein, Sandler, Brochin, Kohl & Fisher to represent him in attempts to negotiate final terms of agreement with the DEP and EPA.

(d) By letter dated October 3, 1975, Wolf's counsel put Ventron on notice of the demands of the EPA for a final settlement and invited Ventron to participate in any negotiations. Wolf also made demand for indemnification of all past, present and future expenses.

(e) On October 8 and 20, 1975, Wolf and his counsel met with representatives of EPA and DEP, respectively, in attempts to negotiate settlement.

(f) By letter dated October 30, 1975, Ventron responded to Wolf's counsel's letter of October 3, 1975 and "denied any liability."

(g) In November 1975, Ventron (Bernstein) admits it destroyed documents in its files relating to the Ventron site (Bernstein Tr., 9/14/76, at pgs. 63-64; 87-88).

(h) None of the files produced by Ventron in the course of discovery were produced in their original form (Faye Tr. I at pgs. 63-64). Bernstein and Derderian admit they assembled all the documents ultimately produced by Ventron's counsel in the lawsuit and reorganized them into folders of their own selection (Bernstein Tr. 9/14/76 at pgs. 82-94).

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(i) By letter dated November 4, 1975, Wolf offered a settlement proposal to EPA and DEP.

(j) On December 22, 1975, representatives of Wolf, the EPA and DEP met for the last time to negotiate the stipulation. No agreement was reached.

(k) On April 9, 1976, the DEP commenced suit against defendants Wolf, Ventron, Velsicol and U.S. Life with respect to the mercury contamination at the Ventron site.

44. Mercury Data Obtained on the Velsicol Tract.

(a) In 1974-75 the Velsicol site contained bottles, drums, plastic bags, roofing material, asbestos siding, tanks, barrels, vats and drums. (LePre Tr. at p. 63).

(b) Outsiders used the Velsicol property to dump trash in 1974-75 (Id. at pgs. 64; 63-66; Wolf Tr., 8/24/77, at pgs. 936-938).

(c) In January and February 1977, the DEP personnel observed dump areas on the Velsicol property (Reed Tr. at pgs. 38-39).

(d) On March 9, 1976, Edward Cotterell and David Longstreet of the DEP sampled five sites at varying depths on the Velsicol property adjacent to the Ventron site (DV-305, dated March 9, 1976; DV-296, photographs).

(e) The results of the sampling revealed mercury concentrations as follows (DV-309, dated May 12, 1976):

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Site	Depth	Mercury (ppm)
1	0"	3.3
	7"	4.2
2	0"	5.6
	10"	5.2
3	0"	4.2
	11"	4.3
	17"	4.8
4	12"	4.2
	17"	5.2
5	0"	5.2

(f) Prior to July 1976, Wolf had been negotiating with Velsicol about an option to purchase the Velsicol property and had orally informed the DEP of his intention.

(g) By letter dated July 20, 1976, the DEP informed Wolf that its preliminary data indicated the Velsicol tract was contaminated by mercury.

(h) By letter dated September 23, 1976, Wolf informed Velsicol that it was not possible to proceed in view of the State's concern for contamination at the Velsicol site.

(i) On September 29, 1976, the DEP sampled 18 sites on the Velsicol tract (DV-297) with the following results:

Site	Mercury (ppm)	Source Doc.
01	3300	DV-46
1A1	5000	DV-47
2A1	3200	DV-48
3A1	3200	DV-49
4A1	5000	DV-50
5A1	3000	DV-51
6A1	3260	DV-52
8A1	3500	DV-53
9A1	3500	DV-54
10A1	4200	DV-55
11A1	3200	DV-56

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Site	Depth	Mercury (ppm)
12A1	13600	DV-57
13A1	4200	DV-58
14A1	4200	DV-59
15A1	3800	DV-60
X1	3300	DV-61
Y1	6600	DV-62
Z1	3300	DV-63

(g) In or about December 1976, the State amended its complaint to add that the Velsicol tract to the property subject to the pending litigation.

45. Mercury in Berry's Creek Tidal Marsh: February 1972 to Date.

(a) Mercury in sediment in Berry's Creek adjacent to the Ventron/Velsicol site was known to the DEP and the EPA as early as August 1970 (DE4-O).

(b) Responsibility for clean up of sediment in Berry's Creek was discussed between the EPA and Ventron officials as early as October 1970, but was not resolved (DE4-U).

(c) Approximately one hundred thirty acres of tidal marsh known as Berry's Creek Tidal Marsh is located approximately two miles downstream of the Ventron/Velsicol property and adjacent to the opposite bank of Berry's Creek.

(d) Berry's Creek Tidal Marsh is within the Hackensack Meadowlands Development Commission boundaries and is part of the New Jersey Sports and Exposition Authority site ("Sports Complex" site).

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(e) Mercury sediments in Berry's Creek Tidal Marsh were first measured by Jack McCormick & Associates (JMA) in June 1972 (M-5 at p. 39; M-4 at p. 13).

(f) In June 1972, JMA issued its "Draft Assessment of the Potential Environmental Impact of the Construction and Operation of a New Jersey Sports and Exposition Complex at a Site in East Rutherford, Bergen County, New Jersey." (M-3)

(g) The report noted that "chromium, arsenic, and mercury are present in unusually high concentrations in the muck beneath the surface and in the channels of the Berry's Creek Tidal Marsh." (M-3 at pgs. 33; VII-11)

(h) The analysis of sediment from the Berry's Creek Tidal Marsh showed mercury along the channel bottom as follows (M-3 at VII-14):

Depth	Mercury (PPM)
0-2"	74
2-4"	38
4-6"	0.32

(i) The results of the 1972 sampling were aired at public hearings on the Sports complex held by DEP and HMDC in July 1972 (M-4 at p. 12)

(j) In 1972, the Feick Report on control of mercury contamination in fresh water sediments noted the contamination of Berry's Creek adjacent to Ventron to be the highest ever recorded in the world (M-14).

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(k) In July 1974, JMA issued a preliminary draft report assessing alternate solutions to the problem of mercury contamination of Berry's Creek Tidal Marsh (M-23).

(l) In making its July 1974 report, JMA made explicit reference to the Feick Report on control of mercury contamination in fresh water sediments.

(m) No person, so far as the record shows, ever gave Wolf a copy of the July 1974 JMA report or the 1972 Feick Report (M-14) until produced during discovery in the pending suit.

(n) The July 1974 JMA report discussed twelve alternate solutions to the mercury contamination, all with varying pros and cons. These were:

Alternative		Cost($)
1.	No action	0
2.	Dredge and remove to landfill.	approx. $4,000,000
3.	Number 2, plus recovery of mercury from spoils.	same as 2, if cost of recovery is self-liquidating.
4.	Recovery of mercury on-site by hypochlorite solution.	$650,000 plus cost of diking-labor, etc.
5.	Entombment by iron-sand overlay.	$325,000 to $390,000 for materials, plus cost of diking, etc.
6.	Entombment by polymer film overlay.	$120,000 for material plus cost of labor, diking, etc.

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Alternative		Cost($)
7.	Entombment by waste wall overlay.	$377,000 to $754,000 plus cost of labor, etc.
8.	Chemical fixation of mercury in situ.	$39,000 (if it works).
9.	Gettering by roasting in situ.	Not given.
10.	Entombment by sand and gravel overlay.	$3,276,000 to $3,549,000.
11.	Inpoundment by diking.	Not given.
12.	Paving	Not given.

(o) In late 1974 and early 1975 JMA prepared a proposed environmental impact statement on behalf of the Sports Authority in compliance with the National Environmental Policy Act of 1969 (M-3).

(p) In April 1975, the Corps of Army Engineers circulated the JMA draft EIS for comment by interested Federal and State agencies and by the general public.

(q) The JMA draft EIS which ultimately was approved and became final noted that JMA had observed mercury in Berry's Creek downstream of the Ventron site, and reported:

> "because the ground at the factory site seems to be saturated with the contaminant [mercury], rainfall may leak mercury into Berry's Creek for several decades." (M-5 at p. 36)

(r) The JMA draft EIS also noted that data on mercury from sediments in Berry's Creek Tidal Marsh had been

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collected in February 1974 in an attempt to confirm the results of June 1972 (M-3 at p. 39). Concentrations of mercury in the 1974 samples ranged from 5.5 to 75 ppm mercury.

(s) The JMA draft EIS concluded that mercury in Berry's Creek Tidal Marsh was more than seven times as great as the highest ever recorded in the available literature (M-3 at p. 39).

(t) JMA studied the levels of mercury at different strata of the sediment in Berry's Creek Tidal Marsh and concluded:

> "[T]he source of mercury [to the Berry's Creek Tidal Marsh] have been abated prior to February 1974." (M-5 at p.39)

(u) The JMA draft EIS concluded:

> "with respect to the mercury contamination, the chemical spills which have occured are anticipated to serve as a continuing source of contamination for several decades."

JMA concluded in general that the Tidal Marsh could be "reclaimed" (M-5 at p. 223)

(v) The U.S. Department of Commerce, in commenting on the draft EIS, questioned the ability to reclaim the Marsh (M-5 at p. 222; A-9).

(w) In response to the U.S. Department of Commerce, JMA amended the EIS to read (M-5 at p. 43):

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> The mercury problem is perplexing and no final plan has been formulated to deal with the problem. There is no little question about the severity of the contamination, but no information is available on the form or the rate of movement of mercury. An investigation has been designed to determine the "mercury budget" of the Tidal Marsh. This investigation will require approximately 16 months to complete after it is initiated. Based on the findings, a plan to deal with the contaminated sediments will be formulated and submitted to the State agencies with jurisdiction.

(x) In October 1975, the Corps of Engineers issued the final environmental impact statement for the Sports Authority (M-5).

(y) A "mercury budget" was prepared by JMA dated August 5, 1975 (DV-306).

(z) The mercury budget report noted that the "marsh scraping process" technique "now is known to be inadequate." (August 5, 1975 letter from JMA to Jack Krumpe, Executive Director, New Jersey Sports and Exposition Authority)

(aa) The mercury budget report observed:

> "The marsh now is contaminated grossly with mercury that apparently originated from former industrial discharges."

(bb) In the mercury budget report, JMA recommended an investigation at an approximate cost of $104,000.

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(cc) JMA did not get funding for itself for the mercury investigation it proposed to the Sports Authority.

(dd) In October 1976, JMA met with representatives of Ventron in Beverly, Massachusetts and Ventron agreed to fund that portion of the JMA mercury investigation dealing with collecting specimens in the area (M-4 at p.39).

(ee) In November 1976, JMA issued a report to Morton Goldfein, Deputy Attorney General, and the New Jersey Sports and Exposition Authority entitled "Summary Report of Analysis From Mercury In Sediments and Waters of The Hackensack Meadowlands District." (M-4)

(ff) The November 1976 JMA report concluded that:

> "The available data indicate that the streams and wetlands of the Hackensack Meadowlands District are more severly contaminated with mercury than any other area known in the world." (M-4)

The report also stated however that "the mercury seems to be present in a relatively inert form, and does not appear to pose an immediate or serious threat to wildlife or to human beings."

(gg) The November 1976 JMA report recommended further detailed investigation of the problems and set forth an extensive program (M-4).

(hh) The November 1976 JMA report also proposed three alternatives for restoration of Berry's Creek Tidal Marsh which "may be viable.":

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1. Remove and replace surface sediment. Estimated cost of $35,000 per acre.

2. Entombment of the marsh by embankments and impermeable cover, at a cost of in excess of $45,000 per acre.

3. No action, allow the contaminated sediments to remain in place and rely on natural processes to purge the area of mercury. (M-4 at pgs. 41-42)

(ii) JMA did not receive any funding or authority from the Sports Authority to continue with its work.

(jj) On February 28, 1977, Jack McCormick wrote to David Bardin, Commissioner, DEP, and William McDowell, Executive Director, Hackensack Meadowlands Development Commissioner. The letter is marked "urgent and confidential." (M-6)

(kk) In the letter of February 28, 1977, JMA summarized some of the test data and background on mercury in the Hackensack Meadowlands. He concluded:

> "Information in my opinion suggests that this mercury problem is regional in scope, and is beyond the reasonable, direct concern of the Sports Authority. The Authority has been exceptionally cooperative and has fulfilled its obligations many times over. The Authority does have a continuing responsibilty in regard to the Berry's Creek Tidal Marsh and the ultimate restoration of that Marsh, but it does not appear to be appropriate to expect the Authority to fund further investigations of this

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regional problem. I recommend that the Department [NJDEP] and the Commission seek the further guidance and assistance and the additional regulatory powers, of U.S.-EPA Region II to continue this investigation. U.S.-EPA has maintained liasion with your two agencies and the Authority during the past five years, we have provided them with copies of all our monthly reports and special reports, including a copy of this letter." (M-6)

(11) To date, no action has been taken with respect to treatment, entombment or removal of mercury from Berry's Creek Tidal Marsh.

46. DEP's Post-Lawsuit Study.

(a) In early 1977, the DEP retained Jack McCormick & Associates (JMA) and they jointly undertook to obtain additional data for purposes of the pending litigation.

(b) On March 8, 1977, monitoring wells on the Ventron site installed by Wolf were sampled:

Well	Mercury (ppm)
Interior	.067
South	.0012
East	.0006

(c) In April and May 1977, the report was discussed among DEP and JMA.

(d) In May 1977, sampling of the drainage ditch across the Velsicol property was begun.

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(e) In May 1977, deep monitoring wells were installed on the Velsicol property.

(f) In late May and June 1977, animal life was captured for analysis.

(g) In June 1977, a "full scale" tidal sampling was begun.

(h) In June 1977, sediment samples of Berry's Creek were obtained.

(i) In June 1977, soil borings were taken on the Velsicol tract.

(j) In June 1977, the first of a series of "mercury dump sites" was discovered in the vicinity of well #5 on the Velsicol property. The following items were removed:

A 1966 newspaper;

flask;

tags and seals dated 1966;

plastic chemical bottles, with a resin type material; and

glass mercury and mercury bottles.

(k) In July 1977, a dump area east of well #1 was discovered on the Velsicol property. Among the items recovered:

glass and plastic chemical bottles labeled "triple distilled mercury-ten pounds net-Wood Ridge Chemical Co." and a newspaper dated April 28, 1970 (Memorandum dated August 5, 1977).

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(l) In August 1977, JMA issued its report to DEP for use as its expert's report in the pending litigation (M-2).

[THE PARTIES DO NOT AGREE AS TO ALL THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS OF THE VARIOUS EXPERTS IN THE LAWSUIT. THEIR RECOMMENDATIONS ARE INCLUDED IN THIS STIPULATION ONLY FOR PURPOSES OF COMPARING THE DIFFERENCE IN RECOMMENDATIONS AMONG THE EXPERTS RETAINED BY THE RESPECTIVE PARTIES]

47. McCormick's Recommendations.

(a) The JMA expert report on behalf of the State makes a number of specific recommendations based on its findings and conclusions (M-2).

(b) JMA recommends that the Ventron property be modified by a revised version of alternative four of the Ward II report to supplement the mercury containment system. Specifically, JMA recommends that an additional deep cut-off wall be constructed around the eastern, southern and northern property perimeter (M-2).

(c) As an alternative to the deep cut-off wall, JMA recommended a water pumping plan (M-2).

(d) JMA recommended that the entire property be re-paved with another material and that the surface be maintained to prohibit any fissures or openings in the surface (M-2).

(e) JMA recommended that any alteration or improvement of the property be subject to a mandatory notice requirement in perpetuity (M-2).

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(f) JMA recommended that the culverts carrying drainage from the Ventron property be excavated, cleaned and removed. JMA recommended that all ditches on or adjacent to the Ventron property and the Velsicol property be cleaned, excavated and removed and that drainage be revised and re-routed surfaced with an impermeable liner such as concrete and that no buried culverts should be designed into the system.

(g) JMA recommended that the channel of Berry's Creek should be cleaned with a small suction dredge and that the excavated material should be placed on the Velsicol property in the basins created by the excavation of the culvert.

(h) JMA recommended that the tide gate in Berry's Creek be reconstructed and repaired to prevent high waters from surcharging the drainage system on the Velsicol property.

(i) JMA recommended the termination of all dumping on Velsicol property and erection of fencing and signs.

(j) JMA recommended as one alternative for the Velsicol property that the "mercury-rich soils on the Velsicol property be removed and decontaminated, and the mercury recovered."

(k) JMA provides no details as to what means or technologies should be employed to recover the mercury.

(l) JMA recommended that soil on the Velsicol property containing mercury in excess of 500 ppm should be excavated and decontaminated and the remaining soil recontoured to

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slope away from Berry's Creek. JMA recommended that should the Velsicol property be developed, it be paved with an impervious pavement where there are no structures.

(m) JMA recommended that any alteration on the Velsicol site be subject to the written approval of the DEP, and a mandatory requirement for approval of any alteration or improvement be a condition of the deed in perpetuity.

(n) As a second alternative to the Velsicol property JMA recommended a containment system "if it is not feasible to excavate and reclaim."

(o) JMA's containment system would be a cut-off wall based on the impermeable varved clay and enclosed by a concrete structure similar to the foundation of the building on the Wolf property.

(p) JMA recommended the remainder of the Velsicol site be recontoured to provide a slope away from Berry's Creek.

(q) JMA recommended monitoring of the wells on the Wolf property as well as the observation wells on the Velsicol property at least once each month.

48. The Gregor Report.

(a) On November 14, 1977, Harry P. Gregor, Ph.D., issued his expert report on behalf of defendant Wolf.

(b) Dr. Gregor is professor of the Department of Chemical Engineering and Applied Chemistry, Columbia University.

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(c) Dr. Gregor recommended that surface runoff from the Ventron site should be conducted to avoid the eastern edge of the Ventron property and the heavily contaminated portions of the Velsicol soil, rather than run through it.

(d) Dr. Gregor recommended that raw earth on the east and along the southeast corner of the Ventron property not covered by warehouse building No. 2 be sealed with blacktop, and that this top seal be extended to the Velsicol property along the eastern border of the Ventron property.

(e) Dr. Gregor recommended that the Velsicol property and the southeast corner of the Ventron property should also be coated over with an impervious layer.

(f) Dr. Gregor recommended that any cracks in the pavement around the warehouses and the like be repaired and maintained.

(g) Dr. Gregor recommended that future management of the property "be subject to an appropriate degree of control by the authorities so it is not altered in such a way as to make for a public hazard."

(h) Dr. Gregor recommended appropriate monitoring of the existing wells on the Ventron property.

(i) Dr. Gregor recommended that the old storm drain system on the Velsicol property be renewed to make it water tight and not permit storm drain water to contact the area of already high contamination on the Velsicol property.

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(j) Dr. Gregor recommended that the Velsicol property be developed for appropriate commercial uses and the residual areas blacktopped over with appropriate provision for storm sewers.

(k) Dr. Gregor recommended a limited dredging of Berry's Creek and placement of any contaminated spoils removed therefrom to areas underneath buildings on the to-be-developed area of the Velsicol property.

(l) Dr. Gregor recommended that nothing be done with the western portion of the Ventron property (Lot 10A). He recommended that if the building were razed it should be done in a way as such that the ground underneath is "not wantonly dispersed or removed from the site."

49. The Stopford Report.

(a) On December 27, 1977, Ventron submitted the report of Woodhall Stopford, M.D., of Hillsboro, North Carolina as its expert report.

(b) Dr. Stopford recommended that further runoff of contaminated matter from the Ventron site should be controlled by blacktopping the eastern portion of the Ventron site to prevent any erosion.

(c) Dr. Stopford recommended that the present drainage system be re-routed so as not to pass through the heavily contaminated portions of the Velsicol property and to decrease the liklihood of distrubing sediments adjacent to the dis-

charge culvert. He recommended that the drainage system be constructed to pass through areas of less contamination on the Velsicol property using lined ditches.

(d) Dr. Stopford recommended a flood gate be constructed at the outlet to Berry's Creek.

(e) Dr. Stopford recommended that the Velsicol tract be planted with ground cover to decrease chances of erosion of contaminated soils.

(f) Dr. Stopford recommended a berm constructed of clay/silt soil be constructed along the borders of the Velsicol property adjacent to Berry's Creek and the ditch along the southwest border of the Velsicol property. He recommended that the berm be planted with ground cover as an erosion control measure.

(g) If monitoring suggests continued movement of contaminated soils into Berry's Creek, Dr. Stopford recommended similar berms downslope from any heavily contaminated areas.

(h) Dr. Stopford recommended the tidal gate in Berry's Creek downstream should be repaired and made operational.

(i) Dr. Stopford recommended sediment in the outflow area along Berry's Creek be covered with a thin layer of clay/silt soil as used in the berm.

(j) Dr. Stopford recommended certain monitoring efforts to assure that containment efforts are effective.

(k) Dr. Stopford recommended that once effective erosion control and monitoring programs are instituted, develop-

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ment of the Velsicol tract can be allowed and should encouraged, provided precautions are taken not to disturb any areas of heavy contamination.

(l) Upon development, appropriate storm drainage of any covered areas should be put in place to eliminate erosion problems from runoff.

50. The Dames & Moore Report.

(a) On February 8, 1978, Velsicol submitted the report of Dames & Moore, consultants, of Cranford, New Jersey, as its expert report.

(b) Dames & Moore recommended a "more careful estimate be made of the amount of mercury in the ground."

(c) Dames & Moore recommended a study of "the surface water-ground water regimes at the site."

(d) Dames & Moore recommended a new monitoring system to measure groundwater flow.

(e) Dames & Moore recommended that based on new data from studies, a containment system with appropriate grading and paving could be used to control the spread of contamination.

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Attorneys for Defendants
Robert and Rita Wolf

Dated: March 1, 1978

By: Michael L. Rodburg
Michael L. Rodburg

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UNITED STATES GOVERNMENT

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